ADVERTISING PAGES REMOVED

FEBRUARY 1930

WORLD'S WORK

RUSSELL DOUBLEDAY *EDITOR*
LAWRENCE M. CONANT ALAN C. COLLINS
ASSOCIATE EDITORS

THE MARCH OF EVENTS

WITH the expenditures of the Federal government dangerously close to the four billion dollar mark, it behooves Congress to exercise the greatest care in authorizing appropriations for which no provision has been made by the Administration. Enactment of a single piece of legislation over and above the recommendations of the Administration might well offset all the advantages of the $160,000,000 tax reduction bill which Congress has passed most expeditiously and at the same time create a Treasury deficit—a contingency that should be scrupulously avoided.

No greater responsibility rests upon Congress than to keep expenditures within receipts. It is an obligation that our national legislators cannot fail to recognize. Inevitably they will deviate from the proposals that the Administration has made, reducing amounts in some particulars and making increases in others. Their task is to keep the grand total within the same reasonable limitations set by the Administration.

Congress has every right to revise estimates upward or downward. The President and the Director of the Budget are fully aware that they are not infallible. They know that mistakes inevitably creep into their recommendations, and that developments following the drafting of the budget message but preceding the enactment of legislation necessitate revision. They expect changes to be made.

The changes, however, should be made only after exhaustive study and inquiry—a fact deserving of emphasis because the tendency on the part of Congress in the past has been to act on limited knowledge and outside information from most circuitous routes.

Admittedly the budget system, which has been operative for almost a decade, has saved the government many hundreds of millions, but its full benefits have never been employed. Year by year Congress has availed itself only of the budget message and such printed documents as the Director of the Budget has transmitted formally, studying the recommendations therein made and then hearing interested officials and citizens who have emphasized, not the needs of the government as a whole but the desires of a single department, bureau, or commission.

The time has come when Congress should correct its policy in this particular. It should recognize that the Budget Bureau goes more deeply into the problem of governmental expenditures than any other group of executive officials or any congressional committee. Day by day, the year around, the bureau studies the problem where other officials concern themselves with it only periodically.

Common sense dictates that congressional committees summon the Director of the Budget to advise with them whenever they propose to make changes in appropriation bills, rather than to rely alone on his printed statements, as in the past—a procedure that has actually extended the haphazard and discredited system of doling out Federal funds into the era of budget making.

It is only fair and just that individual officials should be permitted to discuss the needs of their respective departments, bureaus, and commissions before the congressional committees that draft the bills, but, by the same token, those committees also should hear the Director of the Budget, who is better qualified than anyone else to say whether the changes proposed can be made without damaging the financial structure of the government. If Congress will avail itself of this unexampled source of information, not only will appropriations be made more scientifically but further economies will be effected. This is the next great step for Congress to take.

"Sectionalism" Spells Trouble

IT IS high time for a little clear thinking in Congress on the subject of "sectionalism." Part of each House has lost its head. Accusations of "sectionalism" have been hurled about on the floor of the

Senate during the debate on the tariff bill as casually as pop bottles at a baseball game. Most of these charges have been aimed at the West, and most of them have stirred up resentment. A case in point is a widely read and quoted editorial in the Minneapolis Tribune. "Nothing could be more unjust or more ridiculous than this cry of 'sectionalism,'" the Tribune insists. The West resents it. For the West believes that "agriculture is not sectional but national."

There is a fundamental truth in this observation, though it does not justify the farm bloc in asking for the moon. Agriculture is as important to the East and North as to the West and South. New York is a

bigger farm state than Kansas or Nebraska. Pennsylvania earns more money on its crops than North and South Dakota put together.

The point of the Tribune's editorial is that farming, like manufacturing, is not confined to one locality or one section but distributed across the country. There are wheat fields in Minnesota and wheat fields in Rhode Island. There are steel mills in Pennsylvania and steel mills in Alabama. There are great banking interests in New York and great banking interests in California. And the fortunes and prosperity of the millions of people who own these farms and mills and banks are tied together and inextricably interlocked in the web of modern trade and modern credit.

For a hundred years the spirit of "sectionalism" has made trouble in the United States. It threatens to make trouble now. Yet if we were realists we would recognize that under modern conditions "sectionalism" is out-of-date. For we have created in the United States a genuine interdependence of all interests and all localities. And the wisest principle of action we could adopt to-day would be: "What is best for the country as a whole is best for its separate sections." For the truth of the matter is that in this America of 1930 we have all of us put our eggs in one basket.

The Senate and the World Court

THE AMERICAN people do not fully appreciate one great advantage that will come from adherence to the Permanent Court of International Justice. It is that arbitration cases will be handled more speedily and economically than in the past.

Many such cases come up over a period of years. Heretofore, citizens who have been aggrieved and damaged have turned to the government for relief, requesting that negotiations be initiated. These negotiations have been conducted through diplomatic channels, occasionally being handled expeditiously but more frequently dragging along year after year.

Time and again there have been instances of inability to effect a direct settlement. In such cases a commission has been appointed, the United States appointing one member, the interested power a second, and the two choosing the third. It is notable that the third member on more than one occasion has dictated the decision eventually rendered—a decision that at times has been unfair to this country.

Such roundabout procedure would be obviated by adherence to the Court, which would act most judiciously, disposing quickly of controversies that are so difficult of direct settlement. It is a consideration to which the Senate should give its attention when the time comes to act on the protocol.

President Hoover has satisfied himself that no controversy or question in which this country has or claims an interest can be passed upon by the Court without our consent. He is positive that adherence to the Court, as now constituted, is not the slightest step toward entry into the League of Nations. He believes the Senate should approve the affixing of our signature to the protocol which he ordered early in December.

The Senate evidently is in agreement with him, for, so far as can be ascertained, only sixteen of its ninety-six members are opposed to the action taken. Ratification may be expected, but perhaps not until after prolonged debate.

Battleships and Cruisers

FOR THE next month or two a large part of the world's interest is certain to be focused on the Naval Conference which is now assembled in London. This conference brings the five chief naval powers of the world together in the first discussion of armaments they have held since 1922. It raises the question whether the costly battleships agreed on by the Washington Arms Treaty of eight years ago shall now be deemed sufficient for a world at peace or whether they shall be replaced by new and still more costly battleships. It raises the further question whether cruisers, destroyers, and other types of smaller vessels can be limited by a new treaty in the interest of peace, economy, and international good will.

As the whole world knows, this conference in London has been prefaced by the informal conversations between President Hoover and Premier MacDonald held in Washington last summer. These conversations laid the basis for an agreement on cruiser strength as between the United States and Great Britain, but it has become increasingly apparent that the conclusion of this agreement is contingent on the attitude of Italy and France.

For though Britain is quite prepared to accord parity in cruiser strength to the United States, Britain is also insistent on a sufficient tonnage in cruisers to protect her long lines of communication across the Mediterranean to her empire in the East. In the Mediterranean she must reckon with the French and

Italian navies. And unless these navies are also limited by a new treaty, the lowest figure for cruiser strength satisfactory to Great Britain may be too high for the United States to accept, and the whole effort at London may be futile.

In these circumstances it is clear that we have one more striking illustration of the degree to which national policies are dependent upon international action, in this closely interwoven modern world. To an American farmer in Oklahoma or Nebraska it might seem to matter very little what France happens to think of Italy's offensive strength on the north coast of Africa, and vice versa. But on the ability of France and Italy to reach an agreement on naval programs, the ability of both to reach an agreement with England, and the ability of all three to reach an agreement with the United States depends in some measure the amount of taxes which the American farmer will pay, to finance the building of cruisers, in the long decade from 1931 to 1940.

Fortunately the desire for economy in armaments is not confined at the present time to the United States but is shared by the people of other nations. In this fact, plus the excellent beginning made last fall by Mr. Hoover and Mr. MacDonald, lies the best hope now of constructive action in a conference whose decisions will be watched by the whole world.

Success means that rivalry, which has made for hostilities down through history, will be something of the past. But success will be realized only if there is the will to succeed. It must be demonstrated not alone by the delegates themselves but by the hundreds of millions of people whom they represent.

The duty of the American people is clear. It is to show their whole-hearted support of their official representatives, whether the cable dispatches reporting the daily developments are favorable or unfavorable. Whatever the trend of the proceedings, such support will make easier the task of the delegation. The force of public opinion will be as great as diplomatic exchanges. With lasting peace the prize, it should be exerted to its fullest extent.

When the President Speaks

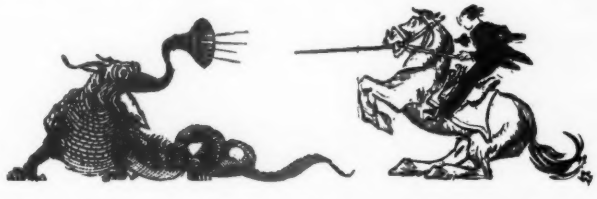
EVERYONE knows that the radio and the great press associations which now gather news have enormously increased the ability of any prophet on the modern scene to lift his voice above the din and make it heard. This is true whether the prophet is a leader of the bar, a college president, or a sports writer predicting the outcome of a prize fight. It is especially true when the whole radio machinery of the nation is linked together in a single hook-up and the presses wait for news of some event of national importance. This happens occasionally in Washington, when the President faces Congress or delivers an address at his inauguration.

An interesting study could be written of the development of the presidential message and the degree to which this development has been influenced by contemporary methods of publicity. George Washington's first inaugural was little more than a brief comment on the theory of the Constitution. His second inaugural was a mere statement of a hundred words. Jefferson had little to say of a specific program when he first addressed the country, and Monroe seems to have been inclined for a time to omit his first inaugural address entirely. With these early presidential statements, modern instances offer a sharp contrast. Mr. Hoover discussed a list of twenty-two specific issues and concrete problems in his inaugural address, and no less than fifty-one such questions were embodied in his message read at the present session of Congress.

Thanks to the modern press, more people read what the President has to say than ever before in history. Thanks to the radio, more people "listen in." In these circumstances the presidential message is no longer a document penned for a few legislators meeting almost in private. It has become an interim report to the whole country on the state of the nation's business, a means of informing Congress that the public expects action, and a powerful instrument for focusing discussion on important issues.

Combating City Noise

SOME months ago it was observed in The March of Events that there were signs of a widespread revolt in the United States against the clash and clatter of the pneumatic hammers, the mechanical pianos, the fire sirens, the automobile brakes, the flat car-wheels,



the radio loud-speakers, and the reverberating ash cans which play so prominent a part in the life of a modern city.

Since this comment was made, it is interesting to observe that public patience has been pushed so far that active "anti-noise campaigns" are now under way in Washington, New York, St. Louis, Boston, and the Loop district of Chicago. Local committees are making surveys. City administrations are planning amendments to public nuisance laws. There is even a movement in New York to persuade the public to boycott any article advertised by means of an unnecessary racket.

How much success these various efforts will achieve, it is much too early to predict. There is general agreement, however, that the problem of city noise deserves intelligent and expert consideration. For the worst thing about city noise is, not that it is a mere nuisance to people who like peace of mind but that it has a direct and damaging effect on public health and public safety.

Dr. Louis I. Harris, formerly health commissioner of New York, is only one of a number of distinguished physicians who have warned us of the wear and tear of steady noise on the nervous systems of people living at the pace of modern life.

Dr. Shirley W. Wynne, who succeeded Dr. Harris as health commissioner, is convinced as a result of first-hand investigation that there is a direct connection between city noise and the sharp increase in street accidents which most cities have experienced in recent years.

Prof. Donald A. Laird, of the psychological laboratory of Colgate University, believes that "serious effects on public health can reasonably be anticipated in the future unless sane procedures of curbing and absorbing noises are adopted."

Such warnings as these come from too conservative sources to be taken lightly. The problem of excess noise in modern urban life will not be easily solved, if it is ever solved, but it is well worth tackling.

Mexico and Ortiz Rubio

EARLY in February a new President steps into power as head of the government of Mexico. This President is Pascual Ortiz Rubio, whose name is not well known on our side of the Rio Grande but whose prestige south of the border is evidenced by the fact that he was elected to his office by the greatest popular majority ever given to a candidate for President of Mexico.

It is no easy task to assume the responsibilities which Señor Ortiz Rubio accepts this month. The machinery of government in Mexico does not run with the smoothness characteristic of similar machinery in older and more experienced republics. The flux of popular opinion is more gusty and more headstrong. The problems which each new President must face are weighted down with special difficulties. Señor Ortiz Rubio will find three such problems in particular to challenge his ingenuity and statesmanship. These problems concern the funding of Mexico's foreign debt; the satisfactory disposition of a highly controversial "labor code"; and the settlement of a long-standing dispute over the form and amount of payment to be made by the Mexican government to foreign landowners whose properties it has appropriated.

These are thorny problems, and they will not be settled easily or all at once. Nevertheless, there is every good reason for believing that the complexities which they present can be unraveled. For the history of recent years shows that other problems which seemed equally difficult have been handled successfully by Mexican governments. It is a tribute to the achievement of these governments that since 1927 peace has been made with the Church in Mexico on a basis satisfactory to both parties; that a series of formidable revolutions has been ridden out; that army discipline, once notoriously unsure and a constant menace to security, is now reported by foreign observers to be well established; that the budget for 1930 has been balanced; and that there is every good chance at the present time that some form of Mexican "Dawes Plan" will be arranged for the payment of the foreign debt.

In these circumstances it is reasonable to believe that progress toward stability in Mexico will continue under the new administration. Señor Ortiz Rubio has appealed for what he calls a period of "magnificent understanding" with the United States, and every friend of peace on both sides of the border will hope that he achieves it.

Business and Engineering Progress

IN A RECENT address which attracted considerable interest in the press Mr. Lawrence W. Wallace, of Washington, argued that engineers have become a controlling force in the culture, politics, commerce, industry, finance, and education of this country. As executive secretary of the American Engineering Council, Mr. Wallace may perhaps be suspected of some bias.

Notwithstanding, anyone who seriously contemplates the degree to which an engineering point of view now affects all the fields which Mr. Wallace mentions is likely to agree that there is a great deal of truth in what he says. This is an engineering age. And it seems to us possible to argue not only that engineers have a controlling part in it but that the effect of their control is likely to become increasingly beneficent.

Let it be granted that Big Business, which is in large measure responsible for the authority which the engineer has acquired in recent years, is interested in modern engineering methods for one important reason—because they return high profits. This fact by no means limits the service of the engineer to the mere matter of earning money for big corporations.

For it is part of the philosophy of modern engineering that profits come only at the end of a long list of other factors. If a business corporation is to earn real dividends these days it must have a modern and well-lighted factory; it must see that the community in which it operates has decent housing facilities for its workmen; it must set an example to this community in the matter of sanitation; it must pay its employees wages which enable them to keep up to scratch in health and efficiency; and it must produce goods which are well made, moderately priced, and capable of adding comfort and convenience to the lives of many people.

All this is not theory. It is the concrete experience of the most successful corporations in the United States. And the practical results of this experience are prosperous modern communities in every section of the country, a high standard of living in the United States, and vast areas of Central America and the West Indies reclaimed from malaria and jungle fever wherever American enterprise has pushed its way.

Despite all the charges of "dollar chasing" which are still leveled against American business in certain quarters of the world, American business can point to achievements which do not lack humanitarian appeal.

Reopen the Mooney Case

IT IS fourteen years since Thomas J. Mooney was convicted of throwing the bomb which killed ten people and wounded forty in the Preparedness Parade of 1916 at San Francisco. Mooney himself is now in prison, serving the thirteenth year of a sentence of life imprisonment. There are people who believe this sentence to be just. There are other people who believe Mooney to be innocent of the crime for which he was convicted. This latter group has worked tirelessly for Mooney's release since his first day in prison. It is a group which now includes three senators, a number of Western newspapermen, and the American Civil Liberties Union.

The facts in the Mooney case are exceedingly complex. The record of actual testimony consists of more than ten bulky volumes and is too formidable for anyone save an expert on the case to feel himself at home in it. Even the brief abstract of the testimony prepared by Henry T. Hunt, now a New York lawyer and formerly mayor of Cincinnati, runs to more than four hundred closely printed pages.

In these circumstances it is unreasonable to expect the average American to be able to equip himself with

any really first-hand knowledge of the case or form any really first-hand judgment on the question,

The average American, however, now has these simple facts before him—facts which seem to raise grave doubts:

Six witnesses who connected Mooney with the bombing have recanted their testimony.

All living members of the jury which convicted Mooney have expressed their present belief that he was innocent.

The trial judge in the case, Superior Judge Franklin A. Griffin, of San Francisco, has informed the Associated Press that he now "believes absolutely in Mooney's innocence and feels that conviction was based on perjured testimony."

These facts do not necessarily establish proof of Mooney's innocence. They do seem to call for the reopening of the case and a fresh attempt to discover whether Mooney was the victim of injustice.

Cost of National Defense

ANY consideration of governmental expenditures necessitates reference to the ever mounting costs of national defense. Budget recommendations for all purposes total $3,830,445,231. Those for national defense alone amount to more than $730,000,000, or almost one fifth of the total. The figure exceeds by $110,000,000 the appropriations for 1924, and it is almost three times the total for the prewar year of 1914.

President Hoover, deeply concerned over the growing expense, has deemed it advisable to ask Congress to determine what action can be taken in the way of retrenchment. With the prospects of peace never brighter than they are to-day, it would seem as though reductions could be effected.

The country, of course, should have adequate means of defense on land, at sea, and in the air, but, at the same time, it is a bit incongruous that the most peaceful of nations should be spending more on its Army and Navy than the most highly militarized nations of the world, even though the remuneration paid its soldiers and sailors is at a higher rate than that of any other country.

Unless there is retrenchment at this time, unless the Conference of London accomplishes its full purpose, the expenses will increase rather than decrease. Part of the burden in recent years has been due to building programs, particularly for the air forces. These expenditures were most essential. Necessary as they have been, the totals will not decrease in the years immediately to come.

No sooner will these programs be completed than others will be undertaken, particularly if the Washington arms treaty is carried out. Construction therein implied commits the country to expenditures approximating $1,200,000,000 during the next six years, not to mention the additional cost of upkeep such construction will necessitate.

Surely it is to be hoped that the London conclave will make some of this construction work unnecessary. If Congress can devise other means to bring about savings without making our defensive arms ineffective, so much the better. It is high time that the subject be given serious thought.

Our New Secretary of War

PATRICK J. HURLEY, who has succeeded the late James W. Good as Secretary of War, is a colorful figure. He has crowded many varied experiences into his forty-six years of life. At eleven he was a

mule driver in an Oklahoma coal mine. Three years later he became a cowpuncher on a ranch in Texas. Frustrated in an attempt to become a Rough Rider while still a boy, he found solace as captain in the Indian Territory Militia, preparing himself for the services he rendered in the World War that gave him a silver star citation for gallantry in action near Louppy, France, "voluntarily making a reconnaissance under heavy artillery fire," and the Distinguished Service Medal for the marked ability he demonstrated in conducting the negotiations arising between the American Expeditionary Forces and the Grand Duchy of Luxemburg.

Not all his achievements have been made in the wide-open spaces of the Southwest or on the fields of conflict. Quite the contrary; they have come as the result of more prosaic pursuits—when he made his

way through Indian University, now Bacone College, when he struggled for his law degree from National University, when he was the attorney for the Choctaw Nation, and when he served as president of the First Trust & Savings Bank of Tulsa.

A self-made man, he has accumulated considerable means, permitting him to turn to public affairs and join that group of men whom President Hoover describes as "the new patriots" because they have made great sacrifices by taking low-salaried government positions.

With the death of Secretary Good, his promotion from the post of Assistant Secretary to the war portfolio was a foregone conclusion, being justified alone on the ground of ability displayed. But it gave the Chief Executive an opportunity as well to recognize the South, several of whose states swung from the Democratic to the Republican column in the election of a year and more ago.

The new Secretary of War is essentially a Southerner. He has the respect of the Administration and the admiration of the service. He should be eminently successful in writing this later chapter of his diversified career.

White Lights of Broadway

AT LEAST once a year, it seems, all roads lead to New York. The Merchants Association of that city reports that in a recent period of twelve months no less than 1,009 conventions were held in New York City, bringing to the metropolis at least 750,000 people. These figures are impressive. There is nothing like them elsewhere in America or Europe. And when it is remembered that in addition to conventions there are a thousand other influences, ranging all the way from business appointments to sheer curiosity, to bring people to New York the Merchants Association can be believed when it suggests that the entertainment of travelers from out of town has now become one of the greatest industries in Manhattan.

Considering the present size of this industry and the number of contacts now being made in New York by all these people, it might be thought that relations between New York and the rest of the country would be constantly improving. As a matter of fact, things seem to be drifting in the opposite direction. New York is apparently losing sympathy rather than gaining it. There is a good deal of evidence to suggest that at the present time the morals and manners and habits of the biggest city in the nation are viewed with suspicion, open disapproval, or actual alarm in many sections of the country.

One reason for this state of affairs may be the fact that visitors to New York seldom come in contact with the great army of New Yorkers who lead quiet lives far from the bright lights of the theater belt.

There are millions of such people in New York—people who live as peacefully in East 89th Street or West 135th as if they were living in Ypsilanti, Michigan, or Saint Joe, Arkansas. Probably most of them originally came to New York, in fact, from towns like Ypsilanti and Saint Joe, for there are not very many native-born New Yorkers.

Few visitors, however, ever see this side of New York's life. They are too busy seeing night clubs. When they come to New York they spend their time in a dizzy whirl of expensive shops, hotels, cabarets—completely convinced, after four or five days of this sort of thing, that New York City has no home life.

In the interest of mutual understanding somebody ought to start a sort of Rhodes scholarship to bring occasional visitors from the South and West to see the New York that lies in the quiet streets beyond Broadway.

Washington's Tariff Marathon

A YEAR has passed since Congress undertook to revise the existing tariff law. Several weeks, perhaps several months, will be required to complete the effort, if, indeed, it is to be completed.

The question is raised because of real uncertainty whether the House and Senate will be able to reconcile their differences. Rarely have the two branches been so far apart on a given subject. The bill, as passed by the House, provided increases in schedules that would raise the tariff walls to higher levels than ever before. The Senate, in contrast, has reduced many of the rates proposed by the House to about the same level as those in the Fordney-McCumber Act, making notable increases only in provisions beneficial to agriculture.

If the differences between the two branches were limited to rates alone, an early agreement might be anticipated, for the House appreciates the error of its ways at last and realizes that it disregarded the request

for "limited revision only" which President Hoover made when he called Congress into extraordinary session. It is more willing now to give the President what he wants than it was last May, when it passed its measure, stirring the insurgent senators to action and bringing about the creation of the coalition which threatens much of the Administration's legislative program.

Concern over the fate of the bill has to do with other changes which the Senate has made in it, especially the inclusion of the export debenture provision for the benefit of the agricultural West and the change in the flexible clause, transferring from the President to Congress the right to revise schedules on the recommendation of the United States Tariff Commission.

A majority of the Senate, comprising Democrats and insurgent Republicans, is determined to keep these provisions in any bill that is finally enacted and sent to the President for his approval or disapproval. The House, dominated by regular Republicans, is as determined to strike the provisions from the bill.

There can be no doubt that authority under the flexible clause should be retained by the President. Neither can there be doubt that the welfare of the country as a whole dictates the advisability of eliminating the export debenture provision. The West and South should be satisfied with the advantages in rates that will accrue to those sections in any bill that is enacted. Whatever the needs of tariff revision may be, it would be better to have the bill die in conference or be vetoed by the President than to have it placed on the statute books, if these two provisions sponsored by the coalition are to be retained in its final form.

Growth of Mental Clinics

WHEN the National Committee for Mental Hygiene was organized twenty years ago, there were few mental clinics of any kind in the United States. To-day there are nearly five hundred such clinics, but many more are needed. For the problems with which these clinics must deal are not easily handled. There are now 300,000 patients in hospitals for mental diseases in this country, and it is an unhappy fact that this population is increasing at the rate of approximately 10,000 annually. Many of these cases could be prevented, during childhood, by the timely application of knowledge already available. It is important to undertake this preventive work in the interest of alleviating human misery, reducing crime, and safeguarding the future of this country.

In the development of a modern attitude toward the problem of mental diseases, the National Committee for Mental Hygiene has played an honorable and a leading part for twenty years. The committee has gathered and published data which have been of great value to the medical profession. It has assisted in the organization of community clinics and educational programs. It has fostered more humane methods of dealing with the problem of mental defectives and improved standards of treatment existing in private hospitals and public institutions.

Such work is too valuable to go unthanked. The National Committee is now making plans for the first International Congress on Mental Hygiene ever to be held, a congress of which Mr. Hoover has consented to act as honorary president. On the eve of this congress the National Committee asks for wide public interest and support. It richly deserves both, on the basis of its record.

Free Entry for Congressmen

FOR a short time last year, after a celebrated incident involving charges of smuggled liquor, members of Congress and other high dignitaries of the government lost a privilege they had long had—the privilege of receiving special favors at the hands of the customs service. Now some of these favors have been restored. The latest ruling on the question states that congressmen and other high officials are entitled to "free entry" when they return from abroad on trips connected with government business (which means that they need submit to no examination of their baggage) and that they are entitled to a special status known as "immediate attention" even when they return from pleasure jaunts.

It is hard to see by what logic the restoration of these privileges can be defended. Congressmen are not royalty. They are not members of a privileged caste. They are not supermen. The mere fact that a party of ten or twelve of them may have been abroad, at government expense, to make some inquiry or report upon some problem is certainly no sufficient reason why they should be honored on their return by the privilege of bringing a trunkful of whisky through the customs with them. As for those members of Congress who have been abroad for pleasure and nothing else, it is an insult to every plain American to have orders issued that such congressmen shall have

"immediate attention" for their baggage, while three hundred other people wait in line for perhaps two hours on a wind-swept pier.

It may be said that the whole question is unimportant and that it does not matter a tinker's dam whether two congressmen from Oskaloosa come merrily back home with six bottles of gin and three Swiss watches in their baggage. In one sense this is true. In another sense it is false. For it is precisely this sort of special privilege which encourages the public to believe that the men who make the country's laws are

among the first to break them. To a very considerable degree the suspicion of some such state of affairs is behind the present tendency toward lawlessness.

This practice of special favors is inconsistent with both common sense and democratic theory. The sooner it is abandoned, the better for all concerned.

Commissions as Governmental Aids

THE TENDENCY on the part of President Hoover to appoint commissions has caused much comment recently. It has occasioned criticism on the floor of the Senate and elsewhere.

The criticism is wholly unjustified. Mr. Hoover appreciates, if his critics do not, that the ever increasing number of problems requiring the attention of executive and legislative officials cannot be solved without the assistance of experts.

The Executive proposes to solicit the services of those intimately acquainted with given subjects, to permit them to hear testimony and exchange opinions, and to submit recommendations to him so he can determine beyond any doubt whether he should recommend action by Congress or the departments within his immediate jurisdiction. He is to be commended rather than criticized, for by his very action he is bringing the government closer and closer to the people.

His action is in keeping with the orderly processes of government, rather than contrary to those processes. Each committee of Congress, as a matter of fact, is a commission engaged in procuring information and determining what legislative action is desirable. It is equally true that each executive department functions as a commission. Of outstanding importance, the established agencies of the government have neither the time nor the facilities to deal with the multiplicity of matters deserving of attention.

Mr. Hoover, by creating commissions, is merely supplementing the work of Congress and the departments. He believes that the more commissions he appoints the greater the efficiency of the government will be. His one desire is to improve the administration of the country's affairs. He should be permitted to proceed with the task in his own way.

Let the President Reorganize

PRESIDENT HOOVER has formally requested Congress to delegate to him authority to reorganize the executive branch of the government, subject to legislative sanction of the action he takes "within some limited period adequate for its consideration." Congress should grant the authority, not only because of the great need of reorganization but because it has demonstrated its own inability to effect the changes so sorely needed.

Complaint cannot be made that the President is arrogating power to himself, for he has proposed voluntarily that Congress pass upon his recommendations before they become effective. Stated as simply as possible, he would relieve Congress of a most difficult duty, applying to it all the organizing genius with which he is credited, but would permit Congress to say whether he has done the work satisfactorily.

It has been emphasized time and time again that reorganization would save the government several hundred million dollars annually. Of equal importance, it would bring about a closer relationship between the public and the government and put an end to the divided responsibility which for so many years has prevented constructive and consistent development of broad national policies.

Whatever the point of view, the reorganization is desirable. Congress should act promptly.

New Faces in the Senate

CONTROVERSY over the right of Governor Fisher, of Pennsylvania, to send Joseph R. Grundy, wealthy manufacturer and veteran tariff lobbyist, to the United States Senate has directed attention to the fact that no less than seven members of the upper branch of Congress are serving by appointment rather than election. The Grundy incident is of outstanding interest because it will be made a major issue in the senatorial campaign to be waged next fall, but it is notable also that practically every session is marked by the appointment of several senators to fill vacancies that have occurred.

Since the last general election Daniel O. Hastings, of Delaware, has replaced Coleman du Pont, who resigned because of illness; Henry J. Allen, of Kansas, has succeeded Charles Curtis, who resigned to assume his new duties as Vice President; and David A. Baird, Jr., of New Jersey, has taken the seat vacated by Walter E. Edge, who accepted appointment as ambassador to France. Moreover, Roscoe C. McCulloch, of Ohio, succeeded the late Theodore E. Burton; William E. Brock, of Tennessee, the late Lawrence D. Tyson; and Patrick J. Sullivan, of Wyoming, the late Francis E. Warren. Mr. Grundy, replacing William S. Vare, completes the list.

Not all these newly appointed senators will hold office throughout the unexpired terms of their predecessors, or will seek election in their own right at the forthcoming election. Senator Baird, for instance, will give way to Dwight Morrow, outstanding financier and "ambassador extraordinary" indeed to Mexico, upon his return to this country in the late winter or early spring from London, where he is attending the conference for the limitation of naval armaments. His designation for the Senate is one of the most heartening signs of the times, for he will bring to the halls of national legislation a fund of experience that will be most helpful to his state and his country.

With very few exceptions, senators by appointment have proved to be as representative of their constituencies as senators by election. The Constitutional right of a governor to fill vacancies should never be violated.

TEN YEARS OF ATTEMPTED PROHIBITION

An Editorial

A FAIRLY wet New Year's Day has just been celebrated. The newspapers are full of discussion as to whether the killings of rum runners at Newport were justified. A meeting in Faneuil Hall in Boston was pretty emphatic in its condemnation of the Coast Guards and the Treasury Department. Members of the Senate have talked with pointed emphasis about prohibition enforcement during its recess. It seems fitting, therefore, that at this time there should be in World's Work a statement of the situation as we see it.

Of prime importance is the fact that the Eighteenth Amendment to the Constitution has never been strictly enforced; bootleg liquor can be purchased in every state in the Union and perhaps in every city and town in the land. Of almost equal importance, there is not the respect for law to-day that there has been heretofore; whether the lack of respect is because of prohibition is for the individual to judge. Of the greatest significance, too, is the determination of President Hoover to improve enforcement; it is evinced not alone by his public pronouncements but by his appointment of the Law Enforcement Commission and by his recommendations to the Congress.

Whatever one's sympathies may be, there can be no divergence of opinion as to the duty of the President. He is under oath to "preserve, protect and defend" the Constitution. The prohibition amendment is a part of the Constitution. Wets as well as drys should be agreed that the President should not deviate from the performance of his duty as he sees it. There should be agreement, too, that he should have whatever machinery he needs to fulfill his obligations.

The problem confronting the President and his Administration is much more difficult than is generally appreciated. Mr. Hoover insisted that the Law Enforcement Commission, which he appointed last spring to assist him, should not confine itself to prohibition but should survey the entire field of law enforcement. One class of crimes cannot be separated from all the others. The administration of justice demands impartial procedure—the enforcing of all the laws, rather than a single law.

Clogging the Federal Courts

The survey has covered a wide range of investigation but none more outstanding than that of the courts, which are far behind in their work; some of the courts are actually eighteen months behind their criminal dockets. Law enforcement under such conditions is practically an impossibility.

The clogging of the dockets, it appears, is due not alone to prohibition but to other statutes that have been enacted during the past quarter of a century and that present a very large percentage of the cases to be tried. Among them are the narcotic law, the law dealing with interstate thefts of automobiles, the Immigration Act, and the Mann Act. The situation is due as well to the increasing technology of court procedure and to the steady increase in population. (See the article on the Attorney General in this number.)

The courts have not kept pace with developments. More judges are needed to-day than were required at the turn of the century. Likewise, more district attorneys are needed. Undoubtedly intricate Constitutional questions will be involved in any change in the structure of the courts, but Congress should give this subject its early and earnest consideration, however difficult it may be. It is fair neither to the government nor to the accused to have the cases drag along for months on end.

Wholesale Confessions No Answer

Because of the clogging of the dockets, district attorneys have sought relief by getting wholesale confessions. Such action is little more than establishing a sort of licensing system that permits offenders to get off with small fines. It puts them in a position of considerable safety and practically makes the government a party to their unlawful acts, if they are guilty, or, if they are not guilty, stigmatizes them for all time with court records.

It is startling, indeed, to read that of fifty thousand prohibition cases before the Federal courts in a given period, only four thousand were brought to trial—the forty-six thousand other defendants being permitted to plead guilty so that the dockets might be cleared. A periodical housecleaning of this kind cannot be tolerated. Appreciating the effect on public opinion, the Department of Justice has issued orders directing district attorneys to discontinue the practice, insisting that the Department pass on the cases before pleas of guilty are accepted. But the staff of the Department is inadequate for such wholesale reviews. It has done little more than resort to an expedient. Congress alone can correct the situation permanently. It should act.

Much of the difficulty incident to prohibition enforcement, we believe, has been due to divided authority. More coöperation, less "buck passing," is required, if there is to be an honest effort at enforcement. The President has been advocating the transfer of the Prohibition Bureau from the Treasury Department to the Department of Justice ever since he entered the White House almost a year ago. Unified control is surely more effective than divided control, and Congress should put the responsibility in the hands of the Department.

Not only should Congress turn its attention to the prohibition problem, but the state legislatures should

(*Continued on Page 117*)

WHATS WRONG WITH TEXTILES

By WILLIAM R. BASSET

With Samuel Crowther

¶ This article will give you an insight into one of the sore spots of industry. It asserts that such ugly events as the Gastonia riots result, fundamentally, from managerial backwardness. Mr. Basset, as textiles expert for the Hoover Committee on Waste Elimination and as consulting engineer, has probed the situation thoroughly.

RARELY does one hear of a prosperous cotton mill. But there are mills in every section of the country that are turning out good stuff, paying fair wages, and earning profits. They keep quiet. Even if they raised their voices they could not be heard above the clamor coming from the mills that are losing money, going into bankruptcy, fighting strikes, or otherwise taking themselves out of the channels of modern business. By no means all the textile people are broke, but those who are—or who think they are shortly going to be—have so advertised the whole industry as sick as to make doubly hard the execution of any plans for its rehabilitation. They have scared off the new money that the industry needs for its reorganization.

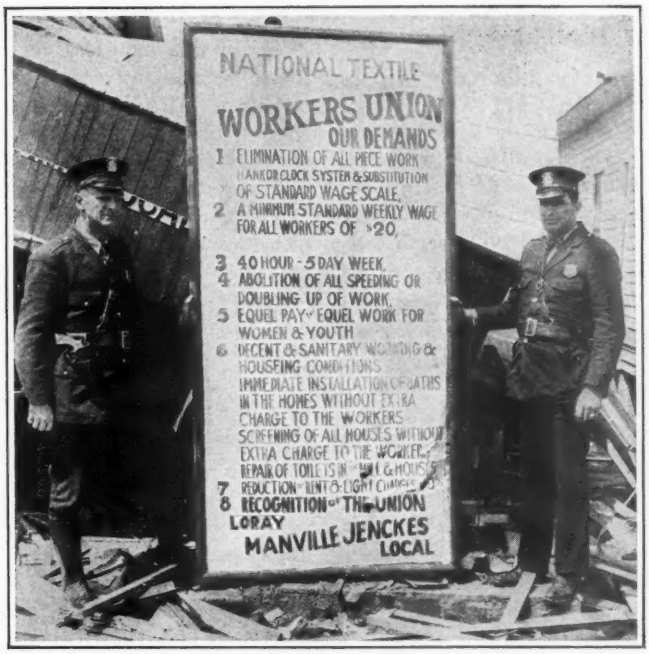
In spite of the success of a very considerable number of companies, the textile group is undoubtedly one of the sore spots of modern American industry. It need not be that way. The mills very generally pay low wages, and many would like to pay lower. In a number of localities they work women and children through long hours for tiny wages, and often they view labor exactly as it used to be viewed in the days before it was realized that the country as a whole cannot hope to prosper if through low wages the great mass of workingmen and their families are removed as customers for other than the absolute essentials of life. Just as soon as an industry begins to be known principally through the violence of its labor troubles, it can be taken for granted that there is something fundamentally defective in the industry itself.

It is perfectly true that some radical labor men can stir up dissatisfaction and a very few experienced men can bring on a strike regardless of conditions or

WIDE WORLD

A crowd of Gastonia, N. C., cotton-mill strikers gathered to hear an agitator advocate that the whole country go on strike. The Communistic drive to organize the South's 300,000 textile workers, which was at its peak last year, lost some of its impetus after the Gastonia killings. The radical organization helping the strikers, the National Textile Workers Union of America, was admittedly "Red" and as frankly opposed to the American Federation of Labor as it was to the mill owners.

whether there is anything to strike about. There is a highly developed technique for doing just that, but no strike will long continue unless there is something real to strike about. Many of the Northern mills have had strikes off and on for years, and although all of them in the end were compromised, none of them was really settled. Neither the employers nor the employees, taking the general average, learned anything from these strikes. There was never any real examination into causes nor any attempt so to reorganize the industry that it might pay good wages and also good profits. The unions wanted to beat the employers and the employers wanted to beat the unions, and together they beat the industry.



A masked mob wrecked with axes the headquarters and commissary set up by the Communist strike agitators in Gastonia. This sign, representing workers' demands, was torn down in the fray.

A few—but only a very few—of the Northern factories studied their situation, devised ways and means for meeting modern conditions, and went steadily ahead. For instance, one concern concentrated on plushes, corduroys, and automobile fabrics, and another on towels and similar products. The first is a sensational success, while the other is doing very well indeed. But many others have liquidated, are marking time, or have moved South. Lowell, for instance, had more than a million spindles operating after the war, while to-day it has less than three hundred thousand; and of the twenty-seven thousand people formerly employed in the mills less than six thousand are now working. Fall River is in about the same condition, while New Bedford is far from doing well. More or less the same sort of story can be told about each of the former textile districts of New England.

Reasons for Heading South

The industry moved South, but not primarily for any of the reasons that were given for the moving—such as to be nearer the cotton fields or to gain cheaper power. The Atlantic Seaboard states, where the mills began to set up, are no longer primarily cotton states. Texas is to-day the big cotton producer, while most of the long staple comes from the Mississippi Delta. There may be some savings in transportation, but they are not material; and while the electrical resources of the South are somewhat better developed than those of New England, yet there is plenty of electric power in New England. The real reasons for moving South were to get away from the unions and to have the benefit of a lower wage scale; and both these reasons, while they would have been counted good enough twenty-five years ago, sound strange in the industrial language of to-day. Modern industry knows that it cannot dodge its problems—it must meet them head on. Moving to the South was only dodging a problem. Now the dodging is at an end. The problem has so shaped itself that it cannot be dodged. It must be met and solved.

This, on the whole, is extremely fortunate, for there is no reason why the textiles should not be among the high-wage, high-profit industries and spreading wealth both in New England and in the South. The plight of our textiles is by no means on all fours with that of the British cotton trades, which have been in a bad way most of the time since the postwar boom and apparently show no signs of getting any better. Four fifths of the Lancashire products went overseas, and most of it was rough cotton goods—with the exception of the fine spinning section around Bolton, which uses Egyptian cotton and has devised some very fine fabrics including some remarkable rayon combinations.

England Has Its Troubles Too

This part of the industry is doing fairly well, but the bulk trade to the Orient and to primitive peoples has been cut into by local manufacturing at lower than the British prices. Lancashire has more skilled textile workers than has any place else in the world, but its former advantage in having the best machinery no longer exists, for both the United States and Germany can make as good and in many cases better machinery than can the English shops.

Thus, with its present organization the coarse British goods cannot compete in the world's markets. The exports of piece goods have fallen to about two thirds of their prewar volume, while the export of yarn has fallen off about a quarter. Even the British home market dropped, and for rather an odd reason. The laundries there put a most exorbitant tariff on the laundering of fine cotton goods, and so the women turned to silk, which could easily be laundered at home. The textile manufacturers, not being in the laundry business, did nothing at all about it. Now the whole industry is in the throes of reorganization.

The only similarity between the American and the British textile trades is that both were organized in traditional fashion in comparatively small units. Where the units are large, they comprehend only horizontal activities. There is no vertical organization. The buying is separate, and so are the spinning, the weaving, the finishing—that is, the bleaching, dyeing, and printing—and the selling. Thus there is virtually

no coördination and a great deal of quite unnecessary waste.

The American textile industry, unlike the British, has plenty of business. The home market of the United States has the capacity to absorb more cotton goods than all of the rest of the world together. Our cotton industry may or may not be too large for normal requirements. I know the industry. During the many years that I worked as an industrial engineer I was consulted by many mills, and some years ago, when in charge of the textiles for the Hoover Committee on Waste Elimination, I had a survey made of the field.

Misrule of King Cotton

I found that over a period of years the spindles worked just about half the time. Some mills worked rather steadily year in and year out, the majority were irregular, while the great number of marginal mills operated only during boom seasons. This was and still is the most striking fact about the industry; and also it is one of the reasons why no wage is really satisfactory to the worker, for no matter how high the nominal rate it cannot be high enough to support a man and his family if he gets it only half the time.

These conditions are steadily growing worse, for the textile industry is to-day, speaking in a general way, an ancient industry trying to function as such in a modern world. The ways of business to-day are not the ways of fifty years ago; but this the textiles ignore.

The tradition of cotton is a sordid, squalid affair which has gone through a great many stages. Scarcely more than half a century ago the experts said that cotton could not be raised without the help of slaves. But time has proved them wrong, although to-day in this country cotton is raised by a sort of slave—the poor tenant farmer in the grasp of vile, money-lending, storekeeping creatures. King Cotton has always misruled his subjects. When cotton machinery came in so did child labor. In England they took little boys and girls from their play and put them to work, and thus they managed to produce the odd, misshapen human beings of the midland counties. In this country the operatives did not stay long enough in one place to let themselves breed misshapen generations.

© ACME

Part of a striker's family at Elizabethton, Tennessee. The father, who has ten children, makes but fourteen dollars a week and pays thirty dollars rent a month. Although his three oldest children work in the mills and his wife takes in washing, he is barely able to keep a step ahead of starvation.

But we, too, started down the same road because it was easier to find children to work than to find management brains. In the "good old days" tots of nine and ten were expected to be in their places in the mills by five in the morning and to work until half past seven in the evening; and as everyone knows, little children are still working in some of the cotton mills of the South. The whole tradition of cotton is that human lives do not count. Everything connected with the manufacturing of cotton is bound hand and foot by tradition. Although technical skill has increased, although probably no industry has been the subject of so much study as has the cotton, yet also no industry is so firmly bound to the past.

The management of a mill is commonly in the hands of a treasurer. He is the only officer who counts. The treasurer is the big man because in the infancy of the industry handling the money was all-important—which gives an interesting sidelight on how the industry grew. Management as such has never been in the same class with guardianship of the key to the strong box, and it is not to-day. The treasurer is the whole show. He buys the cotton, he sells the finished product. The mill is more or less supposed to look after itself. It is a very large company indeed that will have anyone in the management, other than the treasurer, drawing a salary of as much as five thousand dollars a year. The treasurer is usually selected because of his relationship to the principal stockholder. New England mill treasurers are born, not made.

The early spinners and weavers came from England. Down at New Bedford the rise of the textiles was coincident with the decline of whaling. The shipowners set up mills, and the seamen manned the looms. During the latter years of whaling the stomachs of American sailormen grew too sensitive for the whalers, and the black Bravas from the Cape Verde Islands took on the work. They held over as textile workers—taking a voyage once in a while to keep their sea legs. That is why one meets in the streets of New Bedford so many black men speaking only Portuguese. New Bedford is, next to Lisbon and Oporto, one of the most important Portuguese cities anywhere.

Strikes

For several generations the mills outside of New Bedford depended almost wholly upon British and French Canadian labor. The work was then, as now, intermittent—sometimes the state of trade closed the factories, sometimes the lack of water, for that was the motive power. But the people were close to the land and the fisheries; they were not only factory workers. Strikes were few, for the old workers held that a job came from the Lord by way of the boss and was not to be questioned.

It was immigration that brought on the first of the strikes—the foreigners could be hired for less than the English-speaking people. And soon every strike was broken by rushing in immigrants. The steamship companies sent handbills through southern Europe

showing happy mill workers lugging about bags of gold. The peasants came flocking over—to find that their bag of gold would have to be accumulated out of a wage of $6.50 a week. The fights that marked the earlier textile strikes were seldom between the employers and the employees—they were directed by the English-speaking people against the foreigners herded in to fill their jobs.

The tradition of the industry is low wages, and it is impossible for most of the men in it to think in any other terms. Indeed, nearly every practice is fixed by tradition. And many of these practices are out of tune with modern conditions.

A camera-shy Communist leader arrested on his return to Gastonia headquarters. Notice the "headache stick" which the guardsman has taken away from his charge.

Price vs. Cost

Take speculation. In the well-managed manufacturing business the price of the finished product is based upon the cost of production. That is not true with cotton. The mill makes a yarn or a fabric. It costs just as much to do that making whether the raw cotton is selling at ten cents or ten dollars a pound. But the finished product is sold, not on what it cost to make but on the basis of the market price of cotton at the time of sale.

It is not manufacturing skill but judgment in buying and selling cotton that makes a mill prosperous. The manufacturing skill counts only when for a long time the price of cotton remains stable, and that does not often happen. Tradition has built up the practice. It is watching the ticker, not the mill, that counts.

This speculative feature kills real business. The cotton mills start to get busy when the price of raw cotton rises. The curve of activity through the years shows that. They think that a demand is coming on. As the price rises they get busier and busier. They keep bidding up raw cotton and finished goods. And then, when everything is in full swing, they force the price so high that the consumers curtail their cotton purchases and the market breaks. Under these conditions real manufacturing, which seeks always to reduce costs and to sell lower so that the demand may be increased, is impossible.

The cotton mills say that they know costs. I have found that very few of them know costs and that rarely have mills operated at more than sixty per cent of actual annual capacity. No one really knows what cotton goods could be sold for if the mills of the country produced at full time for a year and did not try to speculate. Would that glut the market? Who knows? The cotton trade never tried to glut the market with low-priced, well-made goods in the way Ford tries to glut the motor market. The moment people start to buy cotton goods in any quantity, the long line of speculators that extends from the cotton fields to the door of the consumer starts to jack up prices. The cotton people kill the markets, they do not glut them.

Therefore, because cotton making is a kind of gambling, management skill is not in demand, and the management in general of the cotton industry is on a lower scale than in any other large industry. It is a habit management with stifled initiative. It has not behind it the force that makes the most of machinery. It says that its machinery is already perfect. It seldom knows cotton. Many mills discard one quarter of the cotton bought because it is not the cotton needed for the work. The man who knows most about cotton selection in this country told me that simply buying the kind of cotton best adapted to the work would stop a waste out of which could be paid wages and profits. And so it goes, through every branch of the industry and through every operation.

An industry does not exist solely to pay wages. Neither does it exist solely to pay profits. It exists to serve the public, and always it comes about that serving the public to the best advantage makes high wages and high profits inevitable. When an industry is paying high wages and earning low profits it is in bad shape; when it is earning high profits and paying low wages it is in bad shape. When it is paying low wages and also earning low profits it is in very bad shape.

It was said earlier in this article that the textiles were out of step with modern business. Let me explain. Most of the mills make bulk products, and these pass through so many hands before reaching the consumer that the consumer does not commonly know who makes the fabric going into the shirt or dress or whatever it may be. In the old days this was usual, but to-day the manufacturers of what were once commodities are turning their products into specialties, so that the good will of the consumer can be built up. Unless one has a trade-marked specialty the sales force of advertising cannot be brought in, nor can any of the other special sales appeals of present-day merchandising.

In Business to Fill Orders

Then too, very few of the mills make any efforts to style their goods or to turn out new fabrics; that accounts in a large measure for the slackened use of cotton goods in dressmaking. Many mills have actually tried to fight the styles instead of keeping ahead of them. It is a fact, although nearly an incomprehensible one, that more mills have no sales managers than have them. The selling is regarded as the special business of the big commission houses; the mills simply fill

the orders. In these days, when so much of the retailing is in the hands of chain systems with great buying power, the smaller mills are helpless. And further, since so few of them know their costs, they are likely to sell below cost just to get the ready money that the chains will provide. Thus the mills that do know their costs find themselves up against the most unthinking competition.

Small Mills Up Against It

The speculative character of the industry is probably responsible for nearly all its ills, for there is no great point in giving attention to modern sales methods if more money is to be made on occasion by buying and selling at the right time. But fortunately it has been demonstrated that a mill which makes a first-class specialty and takes it directly to the public earns money. One company has specialized in bed furnishings and has bought additional mills, so that it can have a full line and thus save on sales expenses as well as have more to advertise. There are many such cases. However, in general, the trouble is that there are too many small mills inefficiently managed and with expenses too great for the volume of their business. This means that only through mergers which will bring out strong companies can profits as well as wages be increased in the textile trade. That also is the only way in which prices can continually be kept around a level where they will induce and not repel the steady distribution of finished goods to the consumer. These mergers cannot take place all at once; and although the vertical merger is the ultimate end, more than likely only horizontal mergers would at the beginning have a chance to succeed. The advantages are obvious and numerous. Here are a few of them:

First: Any industry is better off when there are a few strong and well-managed companies in the field instead of several hundred small, poorly managed, and possibly irresponsible concerns. Competition between big fellows is not likely to be ignorant or malicious.

Advantages of Consolidation

Second: Strong mergers will put the industry in a better position to deal with powerful buyers. The consolidation movement among customers has progressed far and will go farther. Chain stores are much too powerful for most individual mills to deal with successfully. There are already a few chains of department stores, and much larger ones are ahead. It will take rather large and powerful mill groups, using the most efficient methods under highly intelligent management, to stand a chance to make a profit from dealings with large groups representing concentrated buying power.

Third: Instead of a number of mills each making several products—which is always more or less uneconomical—each mill would be able to concentrate on one or a few specialties. This would tend to reduce production costs.

Fourth: If several mills making different but complementary products are grouped, they will be able to concentrate their selling through a single sales organization. This type of merger has developed to a great extent in other industries. Postum and Gold Dust are instances. I happen to know that the Postum Company, selling a large group of noncompeting food products to groceries, has through distribution economies reduced its sales expense 39 per cent in the past six years and its general administrative expense more than 25 per cent.

Fifth: Large, amply financed mergers can afford to carry on extensive research into merchandising problems. They can keep in touch better with the ultimate markets on questions of style and can afford advertising campaigns usually impossible to the mills as individuals.

A merger, of course, means nothing of itself. Unless it can produce economies it is worse than useless. But there are economies in the textiles which only the merger can bring about.

In the various stages from the raw cotton in the field to the delivery of a finished product to the consumer, there are eighty-four business functions which involve expense. For instance, each concern up and down the line must do accounting work, collect accounts, incur buying and selling expense, and so on. So long as each stage is under separate ownership, all these operations must be performed.

Are Mergers the Answer?

A few years ago I made a survey of the cotton industry to determine the extent to which such economies could be achieved by a proposed consolidation which would cover all functions from the buying of raw cotton to the purchase by the consumer. I found that 14 per cent of these elements could be eliminated completely and 62 per cent of them very greatly reduced.

Furthermore, great advantages accrue from the ability of each element in a vertical merger to plan its production. Each mill knows definitely beforehand what and how much it will produce. It can schedule production months ahead. The next mill in line is equally benefited by being sure of an uninterrupted supply of the right quality of materials in the right quantities at the right time, so that it too can plan its production effectively and economically.

The economies and other advantages from consolidation are in no wise mere theory. They have been proved many times. Those who have studied them most closely are generally agreed that the greatest possible benefit from a merger cannot be realized until the integration from one end to the other of the production and distribution stream is absolutely complete. That means that the consolidation movement in industry must continue until it has reached its economic limit. In the cotton industry the limit at one end is obviously the raw-cotton buyer; the limit at the other end is the retail store.

There is already a tendency on the part of some of the chain organizations to go into cotton manufacturing just to insure supplies at reasonable prices. None of them wants to do this, for the general experience of retailers in manufacturing has not been happy. However, the industry is only to a small degree really serving. And whenever an industry does not serve, its more powerful customers begin to take it over.

In a word, the textile business simply needs the organization of modern large-scale business.

YESTERDAY'S PURE SCIENCE PUT TO USE TO-DAY

By KEITH HENNEY

NO THIRTY years in history have ever brought to light so much knowledge of the hidden world of the atom and the electron as the first thirty years of the century in which we are now living. If, as a distinguished professor of the University of Vienna has done, you make a list of the discoveries of prime importance in this invisible world since 400 B. C., when Democritus first advanced the atomic theory, you will find that more than half of them have taken place since 1900.

¶ Abstract research means little to the man on the street—until inventions follow that revolutionize his very mode of living; yet the door to knowledge is opened but a crack. Mr. Henney, who has made notable contributions to the literature of radio, discusses momentous discoveries of the past thirty years.

This astounding progress is not due to any remarkable improvement in the human brain. Discoveries have been cumulative; these golden thirty years owe a great debt to three momentous discoveries which took place just before the close of the nineteenth century—the discovery of X rays by Röntgen, of radioactivity by Becquerel, and of radium by the Curies. Each of these led to the next, and each opened a broad highway into the very heart of the universe, which is the heart of the atom.

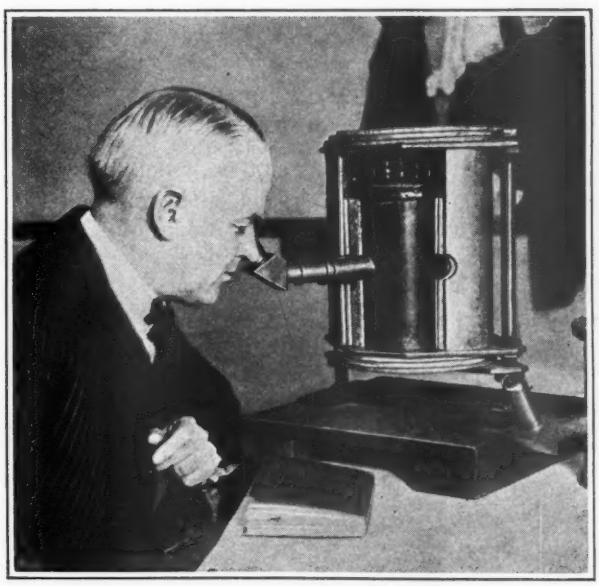
Never before has the work of the pure scientist been tended so carefully or watched so eagerly. Inventors who a generation ago would have been starving in attics and basements are to-day at work in the laboratories of great corporations and universities, with comparatively unlimited means at their disposal. No one knows, themselves least of all, what they will find; but it is they who have brought about the conditions which surround us to-day, and the chances are that it will be they who will determine the course of life to-morrow. It seems a far cry from the atom to the coal bin, but it is no farther than the distance that lies between certain electromagnetic experiments of Michael Faraday's a hundred years ago, and the radio which is perhaps at this moment bringing you a symphony concert or describing a public event taking place hundreds of miles away.

From Democritus's time to the last few years of the nineteenth century the atomic theory winked in and out of scientific thought like a candle in a gale. Sometimes it was thought the universe was made up of small bits of matter, each like every other; sometimes it was thought this was too simple a conception. It was not until five years before the opening of the greatest scientific century of all, the one which we enjoy now, that a vision came of units still smaller than atoms; the atoms themselves were all different, but the stuff out of which they were made was the same. It was not until the twentieth century—which really started scientifically with the discovery of radium in 1898—that the atomic theory came into its own.

Workers with radium found that it kept the vessel that contained it at a higher temperature than the surrounding air. They could not increase the heat, they could not stop it, they had no more control over it than they have over the sun. They did, however, measure it, and they found that if a man could secure a pound and a half of radium he could bring a quart of water from the freezing to the boiling point in about three quarters of an hour. Furthermore, he and his descendants could repeat the process continuously for 1,580 years and at the end of the time still have half the radium left.

It was a great English scientist, Sir Ernest Rutherford, who discovered in 1899 and 1900 that this heat was due to three types of rays, new to science, which he called by the first three letters of the Greek alphabet: alpha rays, beta rays, and gamma rays. This was the beginning of the end of classical notions of matter.

The process by which he and the workers who came after him learned to



Prof. Robert A. Millikan, of the California Institute of Technology, who discovered how to measure the electron and for that received the Nobel Prize in physics in 1923. The electroscope before him is used in the study of cosmic rays.

know the inside of the atom as well as you know the inside of your bedroom is a thrilling story of discovery and invention, and the devotion with which they went about their task is comparable only to that of the devout monks of the Middle Ages.

In 1909 Rutherford proved that the alpha rays were really particles of matter positively charged; they were atoms of helium. A gram of radium shoots off thirty-seven billions of them a second at a velocity varying from 8,800 to 12,000 miles a second. The slowest alpha particle moves 17,000 times faster than a cannon ball. The beta rays were particles too, but vastly smaller and much faster. The speed of a beta particle—or electron, as it is now more generally called—may approach that of light, which is 186,000 miles a second. This is the greatest speed possible in our universe.

The gamma rays had some of the characteristics of X rays but were more penetrating. They could still be detected after they had gone through fifteen inches of solid iron—which means that they could puncture the armor plate of a modern battleship. They are not particles, like the alpha and beta rays; they are rays of light of very short wave length far outside of the visible spectrum.

WILLIAM D. HARKINS

Alpha particles, long tracks, traveling at 11,600 miles a second. Short light track, left arm of Y, made by a hydrogen atom. Short heavy track, right arm, made by an atom from a new kind of oxygen.

The next great step forward came in 1911 when C. T. R. Wilson, a British scientist (Nobel Prize, 1927), showed, in a beautiful experiment, that the atom is empty, just as is the sky.

Structure of the Atom

Ingeniously he contrived to shoot alpha particles into a chamber filled with air saturated with water vapor. Because of its electrical charge, the alpha particle condensed some of the moisture-laden air and formed a fog track so dense that it could be photographed, showing where the alpha particle went. In most cases it went straight, occasionally it darted off at a sharp angle as though from some terrific impact. The alpha particle was positively charged; the repelling force, then, must be positively charged, for it is a fundamental law of electricity that like charges repel, unlike charges attract.

This positive charge was in the very heart of the atom, with so much space around it that the alpha particles shooting through seldom came close enough to feel its repulsion. To-day it is called the proton. It is in the nucleus around which the atom is built. Far from it, as distances go in the atomic world, but bound to it by electrical attraction are the negatively charged electrons. So much of the space in between is empty that Professor Eddington says, "If we eliminated all the unfilled space in a man's body and collected his protons and electrons into one mass, the man would be reduced to a speck just visible with a magnifying glass."

It was now possible to make a mental picture of an atom. The simplest atom of all, that of hydrogen, was visualized as consisting of a single electron revolving around a positive nucleus with but one proton. The centrifugal force—that force which casts water from a rotating grindstone—tending to throw off the electron was great enough to counterbalance the electrical attraction tending to pull it to the center. After this discovery the atom was no longer a solid, static building block; it was a whirling, dynamic, primordial assembly of still more fundamental units.

In this whirling, dynamic motion was energy—the ability to do work. Moreover, it was energy that could be utilized. Nature could use it, but she was not prodigal with it. She was giving it away in radium and a few other rare substances; otherwise she kept tight hold upon it, and it remained to be seen whether man could wrest it from her for his own use.

Investigation seemed to show that all other atoms were built up from the hydrogen atom simply by adding more protons and more electrons in units of one electron and one proton. If this were true, hydrogen could be secured by breaking down a more complex atom. This the scientists set out to do by hurling alpha particles into the midst of nitrogen atoms. This was like throwing pinheads into a large apple tree with sufficient velocity occasionally to knock down an apple. The scientists knew that if an alpha particle broke apart a nitrogen atom and created a hydrogen atom, the fog track of the alpha particle would not be straight but would show the effect of the collision. Four hundred thousand photographs were taken— so carefully do scientists work. Only eight of them showed the creation of hydrogen out of nitrogen, but these eight were impressive and conclusive. A momentous thing had happened. For the first time in history man had deliberately torn an atom apart!

Popular speculators and amateur scientists immediately remembered the hopes of the alchemists—to build gold out of a base metal; others, more practical, thought that energy enough to do the work of the world could be released. The difficulty was that the disruption of nitrogen into hydrogen and the breaking down of the radioactive elements into more common elements is a downhill process. Man had taken a complex atom and made a simple one out of it. Nature is continually doing this in radium, thorium, and uranium, for example. All these elements are heavy, rare, and complex. Out of them less complex, more common, and lighter atoms are made. The downhill process continues until these precious substances have been transmuted into lead.

Will Alchemists' Dreams Come True?

Can we ever start them back uphill again? If we can it will put us in control of the greatest force man has yet been able to conceive, but it will mean making a complex element out of a simple one, and this is a feat of such difficulty that neither man nor Nature is performing it on our earth; yet it may be that somewhere out beyond us in the great reaches

of interstellar space such a building-up process is going on.

What the practical application of the breaking down of the atom will be, no one can with certainty predict. But Sir William Bragg is of the opinion that "atom energy will supply our future need. A thousand years may pass before we can harness the atom, or to-morrow might see us with the reins in our hands."

It is now known that matter is inherently simple; the universe is made up of about ninety atoms, each differing from its brothers only in the number of its protons and the number and position of its electrons. But the laws which govern these minute planetary systems of sunlike nucleus and planetlike electrons are complex indeed. One of the most interesting laws and perhaps one of the most fundamental is known as the quantum theory. It originated with Planck in 1910 (Nobel Prize, 1918) and states that energy does not flow in a continuous stream but in solid units; a jerky flow rather than a wave motion. The way in which the electrons and protons are held together to form the atom leads us to a picture of this discontinuous flow of energy.

Einstein's First Great Contribution

Hydrogen, as we have seen, is the simplest of all atoms; other atoms have more electrons and more protons. The theory generally accepted by modern scientists is that all the protons are in the heart of the atom. Some of the electrons are there too, held to the protons by the intense attraction between them. Far from this center are the other electrons, traveling in various orbits. When an electron falls, or is knocked, from one orbit to another energy is given off. The amount of this energy depends upon the orbit from which the electron jumps. An electron cannot remain in the space between two orbits but must go the entire distance, just as a man climbing a ladder has to go all the way from one round to the next; hence the energy is given off in definite and easily calculable units called quanta.

The sum total of energy in an atom—even a simple one—is tremendous. Einstein (Nobel Prize, 1921) in his first paper, in 1905, made the startling assertion that every bit of matter is equivalent to a certain amount of energy. If matter is destroyed or changed, energy is set free. The sun is the greatest dispenser of energy in the solar system in which we play our insignificant part. In every second it radiates sufficient energy to heat a quintillion tons of water from its freezing to its boiling point; and, as a consequence, the sun loses about four million tons. Appalling as this is, it need not worry the present generation. The sun is so large that in ten years it will have lost only a trillionth a part of itself. Before Einstein we could only guess how long the sun would last.

If we could release the energy contained in the atoms of a single lump of coal it would heat a city all winter. This apparatus is an atom counter. Atomic particles shoot out from the uranium held by the man at the left. They enter the tube, producing electric disturbances, and these are amplified so that a thump is heard; one for each particle.

New Concepts of Time and Space

Now not only can we estimate how long the sun will continue to supply energy for its family of planets, but we know more accurately than ever before the age of our own planet. The rate at which the radioactive elements disintegrate has been measured. Radium, for example, decreases to half its original quantity in 1,580 years. Of a given quantity of uranium, one per cent disintegrates in eighty million years into lead. The highest amount of uranio-lead found in uranium deposits is about 21 per cent. Granting that this ore was pure uranium when the earth's crust was formed, the earth must be as old as this bit of ore; in other words, is at least 1,500 million years old.

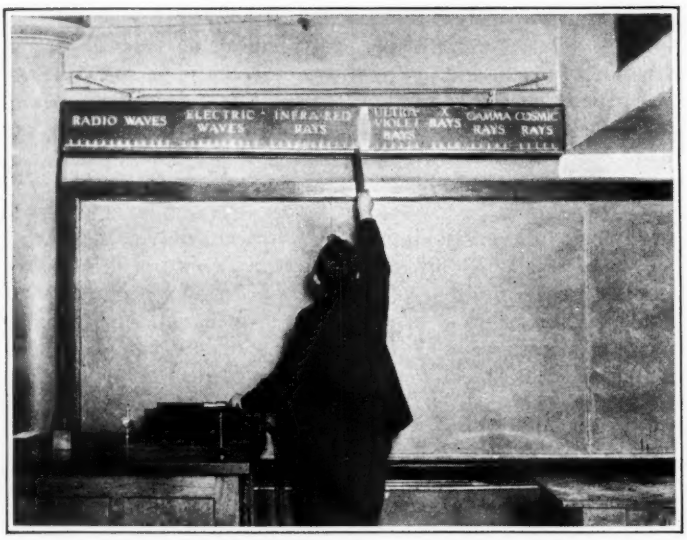
While Rutherford and a long line of other experimenters were at work on matter Einstein was tying together our ideas of matter and energy, time and space. His first paper (1905) gave, as we have already seen, the connection between mass and energy; subsequent papers (1916 and 1929) brought together magnetism, electricity, and gravitation and completely remade our ideas of time and space. They are no longer separate entities; one is but an aspect of the other.

Einstein's famous General Theory of Relativity, according to Prof. J. A. Thomson, of the University of Aberdeen, "is probably the profoundest single achievement of the human mind." It belongs to the twentieth century, to the past thirty years. As yet it is only theory. Einstein himself makes no experiments. His only equipment is a pencil and a piece of paper; the universe is his laboratory. But other men have carried out experiments suggested by him and, in one important respect at least, have proved him right. The particular experiment which did this involved a trip to the South Seas, a battery of delicate instruments, and an eclipse of the sun.

Certain types of minds are afraid of Einstein and men like him. People have always been afraid of the scientist. There is always the danger that his charts and figures will upset some belief or hope dearer than life itself. There is some reason on their side, for the true scientist has no respect for human beliefs or desires, or for anything except the truth. He moves

forward courageously, without knowing where he is going, but he is not by any means in the dark pocket where some have supposed him to be.

He has the audacity to hope that some day he himself, godlike, may hold the atom in the hollow of his hand; and he has a belief, not yet clearly proved but with evidence to support it, that while Nature is destroying her atoms she is at the same time rebuilding them. If this is true—and the cosmic rays newly rediscovered by Dr. R. A. Millikan, an American scientist (Nobel Prize, 1923), seem to indicate it—it may mean that our universe will last throughout eternity.



Illuminated sign showing all ether waves now known. Each section may be illuminated separately. The widest band to the immediate right of the demonstrator's pointer represents the visible spectrum, spanning the only waves that our naked eye may apprehend. Radio waves, too, are in the air, yet our ears cannot hear them unassisted.

The discovery of these cosmic rays is the result of a series of observations which started in Canada in 1903, when several physicists discovered that an electroscope incased in a metallic box did not lose its electric charge so fast as it did outside the box. Now an electroscope consists of two very thin gold leaves suspended on some kind of hook and incased in a glass container. When the device is brought near a charged body the leaves fly apart and remain so until the electroscope is discharged.

Left by itself outside the box, the leaves slowly come together, showing either that the charges leak off or that some highly penetrating radiation, like the rays from radioactive elements, get into the glass container and neutralize the charges. When the electroscope is protected so that these rays cannot get at the leaves the instrument remains charged.

Proof That Cosmic Rays Exist

If all this leakage were due to radioactive substances within the earth, the higher one took the electroscope the less the discharge rate would be. The first conclusive evidence that something besides radioactive rays was at work upon the earth came in 1910 when Gockel, a Swiss physicist, took a charged electroscope up in a balloon and found that even at 14,000 feet the discharge rate had not appreciably decreased. In 1913–14 a German, Kilhörster, went up five and a half miles and confirmed Gockel's experiment. Then the American, Millikan, with the aid of an associate, built an electroscope so small that, together with photographic apparatus and means for getting a permanent record of the temperature and barometric pressure, it weighed only about seven ounces. These paraphernalia were attached to small balloons and released into the air. They went as high as 46,000 feet.

When the records they brought back were analyzed there was no longer any doubt that some radiation aside from that due to radioactive ores in the earth's surface was discharging the electroscope. Rays were coming to us from somewhere in space. Not only did the discharge rate not decrease the higher the balloon carried its burden, but the rate actually increased—showing that the tiny recorder was coming nearer the source of this radiation.

Subsequently Millikan immersed his electroscope in deep mountain lakes and discovered that these cosmic rays would penetrate greater depths of water than any other known radiation. Ordinary light, for example, is entirely lost in going through the thinnest gold leaf; X rays will pass through several millimeters of gold or lead; gamma rays will penetrate many inches of lead. But the cosmic rays have no trouble in prying into a secret kept behind sixteen feet of lead.

Two Conflicting Theories

These rays which come to us from somewhere out in space are so penetrating and represent so much energy that, speaking in terms of what we know about the atom, there are only two possible explanations of their origin. Either a complex atom is being made out of a simple one, or the nucleus itself of the basic atom is being dashed to pieces. The first theory is a comfortable one, for it leads to a belief in the birth of complex elements which may take the place of those which are now disintegrating. The second theory is a cold one and leads finally to a belief in the utter destruction of our universe.

Scientists are not convinced that either or both are true explanations of these cosmic rays. Millikan thinks they originate, not in the heat of the sun but in the vastnesses of interstellar space. Biologists think they may have been the urge which originated life on the earth; that variations in them may cause development of higher organisms and thus play an important part in evolution.

And their very existence was not suspected before the beginning of the nineteenth century!

There is another bit of comfort, for those who wish reassurance as to the continuance of our universe, in the twentieth-century theory of an American astronomer, H. N. Russell. When an astronomer looks at a star through a spectroscope he sees a red or a yellow or a white star. For a long time the red stars have been considered the oldest and coolest, the yellow stars as younger and warmer, the white ones as youngest and hottest. It was believed that a young

(*Continued on Page 100*)

YOUTH AT THE TOP

By JAMES GRANT BLAIR

¶ *Robert Maynard Hutchins—secretary of Yale at twenty-three, Law School dean at twenty-eight, president of the University of Chicago at thirty. Ideas, brains, executive ability, energy, and charm all helped to make this amazing record possible. Mr. Blair, a Yale man of Hutchins' college generation, had contacts making him ideally fitted to evaluate the man and his unique career.*

LAST November Robert Maynard Hutchins was installed as president of the University of Chicago as the latest step in one of the most phenomenal rises in American education. Secretary of Yale at twenty-three, dean of the Yale Law School at twenty-eight, his thirty-first year discloses him as co-founder of the Institute of Human Relations and as the personal director of one of the country's greatest institutions.

This is, indeed, the Young Man's Age.

Ever since Charles M. Schwab at the age of thirty-eight headed the first billion-dollar corporation, the world of business has offered an increasing number of places in the sun to the outstanding young men of the nation; until to-day it is almost a commonplace bit of news to hear of bank executives and industrial leaders "arriving" in the fourth, if not the third, decade of their lives.

But the staid circles of education have rarely, if ever, brushed aside their academic conservatism to make way for so young a star within their horizon. Progress in a university career is traditionally slow. Mr. Hutchins' ascendancy is not only a genuine news item but has also a unique national significance. His election is indicative of the spirit of the times, of the national zest to meet and overcome the problems of a great transitional period which surpass in scope and kind any known precedents. As president of Chicago University he evidences the progressive, quickened American pulse in fields formerly only vaguely associated with the affairs of the workaday world. He is primarily concerned with the utility of knowledge, with the practicality of education, with the relation of intellectual men to social responsibility. Apparently in his judgment the mental powers of a nation can be harnessed equally as effectively as its natural resources. He is one of the foremost pioneers in the "new education"—in bringing the facilities of universities out of cloistered seclusion into a more active participation in the nation's affairs.

With a background of unusually adequate experience for his years, Mr. Hutchins is rich in qualifications for his new job. His intellectual alertness and originality, his disregard for sham and useless traditions, his administrative courage, his analytical perception, his dynamic energy and force of personality have been recognized by all who are familiar with him and his work. He is a natural executive. He is an organizer. Above all, he is an effective speaker.

If any one qualification could be responsible for the early recognition of his capabilities, it undoubtedly is his ability to make a forceful, convincing speech. His technique is distinctly modern. Tall, dark, with intense black eyes and a striking appearance, he has an arresting platform presence. He uses no oratorical flourishes. He wins his audience with dry, caustic wit, usually in the form of a satirical, mock-heroic, highly humorous belittlement of the problems at hand. His introductory flippancy swiftly changes to a dignified, effective presentation of his case. He speaks directly, tersely, staying close to tangible facts. He is an original thinker, and his thoughts, like those of most original thinkers, are stimulating to some and irritating to others. But whether irritated or stimulated, his listeners hear him out to the end, for his is the rare ability to rivet attention throughout a long speech. In the course of his intense career his oratorical talent has served as the chief magnet to bring about opportunities for the recognition and exercise of his personal powers.

Born in Brooklyn, January 17, 1899, he spent his early school years in Oberlin, Ohio, where his father was a professor at Oberlin College. His father, William James Hutchins, a graduate of Yale and of the Union and Oberlin theological seminaries, is now president of Berea College, in Kentucky—a college unique in the particular emphasis it places upon public speaking and

in the fact that all its students earn their way through college by doing some sort of agricultural work. His mother, Anna M. Hutchins, is a graduate of Mt. Holyoke College. For years back the families of both parents have been educationalists in New England.

A Speech That Struck Home

Young Robert attended Oberlin Academy and spent two years at Oberlin College. At both places he devoted himself to the study of English and to debating activities. It seems they liked to debate in Ohio then. Schools, communities, even counties maintained their debating teams, and forensic contests were followed with the same enthusiasm that supported football games. Hutchins became a well-known participant in these affairs and won quite a local reputation for his speaking abilities. A few months after he passed the eighteen-year mark he enlisted in the Ambulance Service in 1917, serving fourteen months on the Italian front and receiving the *croce di guerra* for bravery under fire.

In the autumn of 1919 he enrolled as a junior at Yale and during his half-course in the college became recognized as a class leader; won social distinction among fraternities and societies without an athletic label; made his own living waiting on table, tutoring, doing odd jobs; was awarded a Phi Beta Kappa key and the De Forest Oratorical Prize (which his father had won before him); and—to round off a two-year college career that can well be the envy of four-year men—was elected "class orator."

It was a speech at an alumni dinner during his senior year that brought him forcibly to the attention of academic authorities there. He spoke upon the evils of paternalism in American education, especially those at Yale. Without mincing words he exposed Yale's educational wrongs, about which the younger generation so keenly felt but hesitated to speak—moss-grown traditions, futile routine, sterile conservatism, the practical uselessness of most college courses. The elder Victorians and academics stirred in their chairs, their staid sense of propriety shocked to hear such things paraded so openly and, some thought, so brazenly.

In the autumn after graduation, Hutchins married Miss Maude Phelps McVeigh, a graduate of the Yale School of Fine Arts, a sculptress of distinction, and a charming hostess. They moved to Lake Placid, where he taught English for a year at the Lake Placid School. And then in December, 1922, he was called back to New Haven to become the 23-year-old secretary of the University. Yale wanted an official spokesmen who could speak and raise money at the same time. Hutchins surpassed all expectations.

Raising Funds for Yale

He spoke incessantly for five years. The number of his speeches literally reached the hundreds. Upon being accosted as to the nature of his occupation at that time he cryptically replied, "I am doing oratorical work with Yale University." He spoke at alumni dinners from coast to coast. He spoke at meetings large and small in New Haven. He addressed boards of trustees, chambers of commerce, governors of philanthropic societies, bar associations, schools and colleges the country over. And he spoke effectively. Funds began to pour in. Yale's endowment swelled. The young secretary raised more money than any other man had ever succeeded in gathering for his Alma Mater. He was the perfect liaison officer between cloister and coffer. He knew how to frame academic needs in the language of the business world—a university was "a great, going concern" that needed money as well as any other concern, and money expended therein for practical purposes was a community investment that would eventually pay out. Business men sat up and listened, then opened their check books.

During this successful campaign he managed to attend the Yale Law School, between speeches as it were, and graduated with the highest honors of his class and with a degree *magna cum laude*. The day after he received this law degree he returned to the Law School, a member of the faculty, and began to teach public-service law and evidence. He continued his executive duties as secretary of the University while serving as full-time lecturer upon the law faculty, thus carrying on two full-sized jobs at the same time.

A few months later, in the spring of 1926, the deanship of the Law School became vacant. Mr. Hutchins was immediately installed as acting dean, before he himself had passed his bar examinations. This brought about a curious coincidence. In his capacity as acting dean he had to sign his own credential papers from the Law School before being admitted to the Connecticut Bar. Within the year his temporary appointment was replaced by a permanent one, and at twenty-eight he became dean of the Yale Law School.

Innovations at the Law School

He immediately began to renovate the Yale system of teaching law. The curriculum was revamped. Classrooms were thrown open to discussion. Teaching was done largely by honors courses in small groups under limited enrollment. He improved the quality of the student body by raising the standards of admittance. In two years applications for entrance rose from 220 to 600, and applicants accepted dropped from 160 to 100. He strove to make the Law School a graduate and research institution rather than a mere preparation for bar examinations. To him the function of a law school was dual—to prepare men for careers as practicing lawyers and to maintain a permanent laboratory for the critical and scientific examination of all phases of law as a social science. He sought to analyze obsolete laws and present conditions in order to guide present and future legislation, and to publish studies of the present machinery of the courts with attendant decisions and circumstances. His practical eye consistently molded his innovations. He saw clearly that the important thing about a question of law was, not what other judges had decreed under similar circumstances but what effect a given decision would have upon the contestants and the community as a whole under the present conditions. The sanctity of law is to be measured by its practical effectiveness.

He instituted particular lines of research which have definite bearing upon different phases of the nation's commercial life, to be carried out by his professors and students. Typical of the investigations he fostered, while doing considerable research in evidence himself,

are the studies of the causes of bankruptcy and of the legal effects of banking rules; likewise the researches made in coöperation with the Department of Commerce upon the conditions of small loans in the community.

Probably his greatest innovation as law-school administrator was the introduction to the study of law of materials from other fields of thought. He brought economists, sociologists, and psychologists into the law faculty in order to give his students a full-sided study of law, not as an abstract field of knowledge, but with its actual causes and consequences, social, economic, and mental; law presented in the aspects of its human relationships.

The latter phase of his enlarged Law School projects led to the foundation of the Institute of Human Relations, a widely discussed educational experiment which has drawn favorable comment from the country's leading educators. Mr. Hutchins, with Dean Winternitz, of the Yale Medical School, launched the ideas for the Institute, campaigned successfully for the necessary $7,500,000, and had the foundation accepted as an established unit of Yale University. Its purpose is the scientific investigation of man's behavior from the mental and physical, the individual and social viewpoints. The Institute is designed to bring together sociologists, biologists, psychologists, and economists who will combine with their colleagues in such applied fields as law, medicine, and psychiatry, to correlate knowledge of the mind and body and of the individual and group conduct and to study further the many factors influencing human actions. It is a highly organized group of scientists for the study of the everyday problems of everyday life.

The New Type of Educator

Mr. Hutchins was instrumental in its foundation because he believes that through the Institute of Human Relations it will be possible to introduce into the study of law an understanding of human life which has long been ignored. And that is one of the chief stars by which he steered his two years of administration of the Yale Law School.

Shortly after the Institute was established, the board of trustees of the University of Chicago and a joint faculty committee unanimously recommended the appointment of Mr. Hutchins to the presidency of their institution. A careful study of the situation and a thorough canvass of the possibilities pointed him out as the man most admirably fitted for the position. His qualifications firmly second his appointment.

He says his present policy will harbor no drastic changes. Chicago University will continue to train youthful citizens under the direction of its experienced faculty and to foster a continuous education through research and through meeting the country's increased demand for trained personnel, teachers as well as technicians. As executive and administrator, as organizer of mental forces for practical ends, Mr. Hutchins in his new position bespeaks intellectual and material prosperity for the University of Chicago.

President Hutchins is a national figure not solely because he heads a university which is counted among the six greatest in the world, but also because he is among the foremost "practical pedagogues," a new type on the educational scene and a new type in national life. John Dewey is widely known to be among the first philosophers to use philosophy for the practical purposes of education. Hutchins goes a step further. He is among the first educationalists to use education for the practical purposes of the nation's life. He combines a vigorous academic training with a practical, progressive attitude toward education and systems of knowledge. His spirit of conquest and social utility is the breath of twentieth-century America. His flair for far-reaching projects and educational combinations is in harmony with the times. American education needs executives and organizers. In forty years the number of college students has increased from 60,000 to 1,000,000. Such an expansion necessarily requires renovated administration, new operative machinery, greater utilization of the nation's mental facilities.

Friends and Criticizers

If Mr. Hutchins' ascendancy is unique in university circles, if his rise can be compared to early successes in the workaday affairs of the commercial world, it is because abilities such as his make great lawyers and great industrialists and because American education, in coming closer and closer to the problems of everyday life, has urgent need for those abilities combined with academic training.

Representing as he does the modern type of educator, Mr. Hutchins is heir to the criticism that falls to all innovators. Some of it has been legitimate. Most of it comes from envy and shock. He has been criticized for his brusque mannerisms and his flippant self-assurance, for commercializing education, for placing material benefits and social good before the things of the spirit, for being too much of a promoter and too little of a scholar, for favoring high-powered organization of ideas in preference to the ideas themselves. He is even criticized for his complete disregard of criticism.

It perhaps is significant that his detractors seldom know him personally; the people who do know him swear by him to the end. Nor has his spectacular rise been without a political legend in the background. It is said that the favorite sport among the law students at New Haven last year was betting that Robert Maynard Hutchins, one day in the not distant future, would be the Democratic nominee for the Presidency.

A Political Future in Store?

Enthusiasts, if called upon, would cite the fact that he was offered the nomination for senator from Connecticut in 1926, when he was too young to accept it, and that he was offered the same nomination in 1928 but was too engrossed in the rehabilitation of the Yale Law School. Others would say he was offered the position of Democratic national committeeman for Connecticut in January, 1929, and that he again turned down politics for education. Still others would make prophecies of what will happen, now that he is an established practical educational leader in Illinois, a Democratic pivotal state.

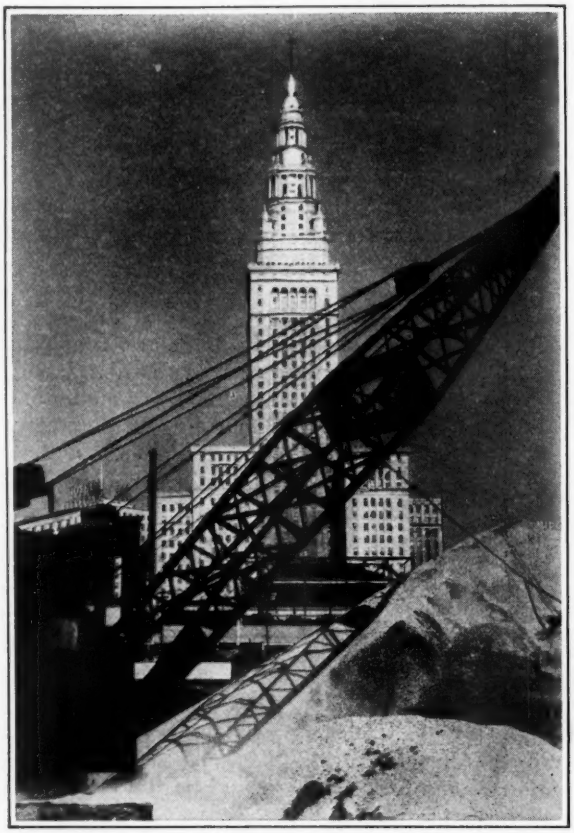
To say the least, this undertone of politics lends color to the current speculations upon the present and future national significance of Robert Maynard Hutchins.

A TOWER THAT DOMINATES ALL CLEVELAND

By ALBERT SIDNEY GREGG

WHEN Henry Ford wanted to move a D. T. & I. railroad bridge near his River Rouge plant in Detroit he bought the entire railroad. The transaction took about ten minutes.

When O. P. and M. J. Van Sweringen, Cleveland real-estate operators, needed a downtown terminus for the rapid-transit line serving their 10,000-acre development southeast of the city, in Shaker Heights Village, they also bought a railroad—the New York, Chicago & St. Louis (Nickel Plate). Ford was content to develop his one road and make it pay; but once the Van Sweringens got a taste of the new business they bought more railroads, and almost before they knew it, railroading was their chief occupation. They control to-day some twelve thousand miles of right of way. They have unified a system of lines powerful enough to bid against such mighty competitors as the New York Central, the Pennsylvania, and the Baltimore & Ohio, for the cream of the Eastern markets. However, they have retained their interest in real estate and are artistically developing some magnificent property east of the present Shaker Village that can likewise be served by rapid transit.



MARGARET BOURKE-WHITE

From whatever point one views Cleveland, the Terminal Tower dominates the horizon. Its construction marks a milestone in the growth of the city, and it cannot but influence metropolitan and suburban expansion.

As successful business men, the brothers could not abide the idea of owning a losing property. Their new railroad must be made to pay in itself, aside from its part in their real-estate business. To place it on a sound, permanent foundation they needed freight traffic, and freight they did not have, so they bought a line into St. Louis, the Clover Leaf. Followed the Lake Erie & Western, the Chesapeake & Ohio, the Hocking Valley, and the Erie, that plaything of the 1870's. All these roads they improved and placed on the road to prosperity. The policy has made the brothers nationally known figures.

Soon after their entrance into the railroad field the Van Sweringens made plans for a new union station at the Public Square in Cleveland. The New York Central, the Cleveland, Cincinnati, Chicago & St. Louis (Big Four), and their own railroad, the Nickel Plate, participated as guarantors. The Van Sweringens also planned an ambitious group of companion improvements to the terminal, the first of these being the 52-story Terminal Tower.

It is an interesting commentary on the personality of the brothers to note that although ninety-three per cent of the capital to finance this project has been supplied by the New York Central and the Big Four, yet in the public mind they are credited with the entire scheme.

The Cleveland Union Terminal Company, a corporation of which O. P. Van Sweringen is president, was formed to build this giant terminal and its great tower. The latter, now complete, rises 708 feet above the station concourse level. From its forty-second floor, which is used as an observatory, a bird's-eye view can be obtained of the entire city and surroundings. In the days of short-lived "highest ever" records mere tallness loses much of its significance; but the heights of New York's leaders—the Chrysler, Manhattan, Woolworth, Metropolitan, and Singer Buildings (1,030, 925, 792, 700, and 612 feet respectively)—help to make the picture vivid.

Two eighteen-story buildings were immediately erected adjoining the Tower and form part of the Terminal Tower group. They are the Builder's Exchange, embracing nine floors of garage space with capacity for 1,500 cars, and the Medical Arts Building. The present Hotel Cleveland forms part of the Terminal center, which includes a department store, an eighteen-story Midland Bank Building, and a 700-room addition to the Hotel.

In judging anything the Van Sweringens have done, one must always bear in mind that they were real-estate men first and railroad owners second. This fact

MARGARET BOURKE-WHITE

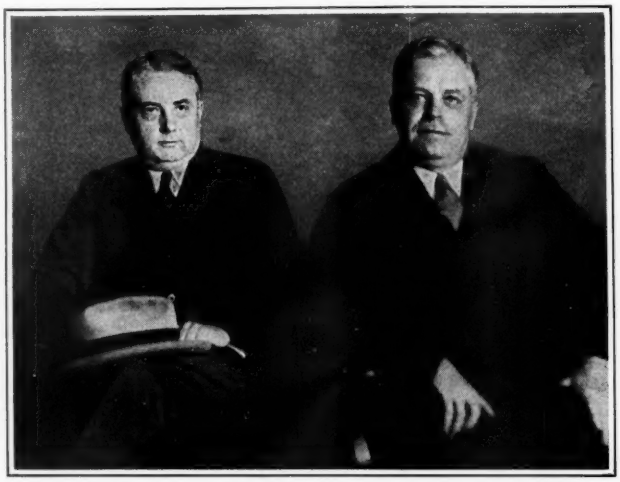
DOWN INTO THE HEART OF CLEVELAND

Looking through a grille toward the base of the tower which, together with the two accompanying office buildings, now forms Cleveland's transportation center. Some of the railroads, in addition to the interurban and street-car lines, focus here. What is more, this group of buildings seems likely to check the rapid eastward growth of the business district away from the square which many thought had seen its best day. Some picture the terminal as eventually being used not only by the present occupants—the New York Central, the Big Four, the Nickel Plate, and the Wheeling & Lake Erie—but also by the Erie, the Baltimore & Ohio, and the Pennsylvania. Accordingly, engineers have laid plans calculated to take care of this additional traffic. In case of rapid metropolitan growth it remains to be seen whether such a rail center is feasible; but in any event the Terminal stands as an impressive monument to Van Sweringen achievement.

accounts for many of the unique features of the Terminal. It functions not only as a station for through and local trains but it is the first attempt, so far as is known, that has ever been made in this country to unify a city's transportation system under one roof. Trains and taxicabs there are, of course. There are also street cars and rapid-transit interurban lines. Heretofore the lowly street car has been obliged to stay out in the street, there to discharge its customers in all sorts of weather.

The entire Terminal development—comprising all the buildings, forty-two miles of trackings, ten acres of platforms, and all that goes into the enterprise—represents an investment variously estimated at from $150,000,000 to $200,000,000. These figures take on peculiar significance when it is remembered that the Suez Canal, for instance, represented an outlay of only some $80,000,000 when it was opened for traffic back in 1869.

The Terminal area proper consists of thirty-five acres. More than fourteen hundred buildings of all sorts were torn down and four million cubic yards of earth removed. A new railroad bridge as a western approach to the depot has been built over the Cuyahoga River with a clearance high enough to permit the passage of lake steamers without a drawbridge. Over a ten-mile stretch east of the Terminal the Nickel Plate has been rebuilding its entire roadway to accommodate its rapid-transit service.



Left to right: O. P. and M. J. Van Sweringen. They were in business as dealers in Cleveland real estate before railroading claimed them. Their sudden rise to the very top of the railroad heap is the sensation of our modern transportation history.

In most cities one tower more or less would not make any difference, but in Cleveland the Terminal Tower marks the transition of the city from an overgrown country town to a real metropolis. It bulks so large and impressive and, with the group of buildings adjoining it, stands out against the skyline so sharply that it cannot be ignored.

Before the Terminal Tower was erected, business was moving eastward. Many business men regarded the Public Square as a back number and, with true small-town skepticism, were not sure the new Union Station would ever be erected. They are now trying to get their business boats headed back in the right direction before it is too late. After the system is fully organized and a million people monthly, more or less, are being unloaded from half a dozen railroads at the Union Station and from bus and interurban lines, the effect is going to be felt by merchants all through the business district.

The Cleveland Terminal will be used by four railroads at first—the New York Central, the Big Four, and the Nickel Plate as proprietors, and the Wheeling & Lake Erie as tenant. However, track and platform room has been provided for additional roads; and when and if the Erie, the Baltimore & Ohio, and the Pennsylvania get ready to join the Terminal group provision can readily be made for them. Within the station area are thirteen tracks and six platforms. South of the tracks are coach-storage yards. When and if it becomes necessary to increase facilities these yards will be removed to outlying points.

Before starting work the Cleveland engineers made a thorough study of the Grand Central Station in New York City. The most striking effect there was economic. For instance, the tax revenues accruing to the City of New York from Grand Central property have increased from about $700,000 to $3,000,000 yearly. Land values became so high that hotels, clubs, and apartments have been built over the tracks, thus utilizing so-called air rights. Notable among these buildings are the Commodore, Biltmore, and Roosevelt Hotels, the Graybar, Lincoln, and Chrysler Buildings, and the New York Central Office Building, which has been constructed directly over the tracks. Miles of underground passageways connect the Grand Central with hotels, apartments, and subways. These are brilliantly lighted and are lined with small stores handling a wide range of merchandise. Thus the small dealers who were driven off the surface streets have found really better accommodations in this new "underworld" than they had before. These developments furnish an indication of what may be expected in Cleveland in the course of time.

In addition to the Union Terminal the Van Sweringens have promoted the erection of a gigantic food center, comprising ninety-six separate units, into which refrigerator cars can be run from Chicago, Pittsburgh, and points in the South. This system will give Cleveland fresh fruit and food each morning in large quantities. The new structure covers twenty-seven acres and is perfectly equipped throughout. More than 370 old buildings were torn down to get the space. The cost was between $6,000,000 and $7,000,000.

The erection of this food center typifies the whole Terminal project. Cleveland's transportation needs have been forecast and provided for for years to come, and if the Van Sweringen hopes are realized, the Terminal in time will form the focus of four great east-west trunk lines. Almost anyone can solve to his own satisfaction the consolidation tangle in which the Eastern roads are involved; the Interstate Commerce Commission must solve it in the end. Had the brothers not been in the picture the problem would have been far simpler. But in the picture they are, and they intend to stay. The Terminal, mighty proof of their achievements, symbolizes the key position they now hold.

POLITICS AND FLEETS

By WILLIAM HARD

THERE IS considerable ground for believing that the prospective outcome of the Naval Conference at London can be stated in a double manner as follows: Either there will be a successful unanimous limitation of naval armaments by the five assembled great naval powers; or else, out of the failure to achieve unanimity, there will be a growing coalescence of the views and of the policies of the United States and of Great Britain in international affairs in general.

In other words, unless all five powers can agree, and unless by their agreement a certain increased stability is given to the world situation, the responsibility for the maintenance of some sort of stability in it will inevitably and automatically devolve more and more upon the two greatest of naval powers at their respective capitals of London and Washington.

Any such prospect is of course feared and resented at Paris and at Rome. Talk in anticipation and in criticism of some supposed possible Anglo-American alliance is continuously current on the European continent. Such an "alliance" is denounced there as an attempted form of world domination. It is assumed that in the American plutocratic—and perhaps predatory—mind the desire for world domination is a natural one. Good Europeans are summoned to be on watch and at guard against it.

Naturally Americans are well aware that in the average Rotarian breast there swells not the slightest aspiration toward world domination of any variety. In fact, the Rotarian intelligence and also all the rest of typical normal American intelligence is far too practical and far too prosaic and too realistic to be captured by dreams of the arbitrary pursuit of glory—dreams always ultimately accompanied in practice by nightmares of downfall. It is really too bad that European thought seems so often to be wholly unable to grasp the fact that such ideas as world domination for the purpose of national aggrandizement and of national pride seem to the average American and to the American nation to be positively childish.

"Entangling Alliances"

European thought seems also to be wholly unable often to grasp the fact that the idea of an alliance with any great foreign power is to the United States just as obnoxious to-day as at any previous period of its history. An alliance invariably expresses or implies an obligation in named or unnamed contingencies to take up arms for the joint defense of the members of the alliance. To such commitments the United States entertains to-day the same aversion that it has always entertained since the moment when, in the Administration of George Washington, it found itself unwilling to fulfill a commitment of that variety made to France in our Alliance Treaty of 1778 with that country. One experience with the aftermath of an alliance with an overseas power has sufficed us till now, and it seems likely to for a long time to come.

No American President, it should be painstakingly understood on the European continent, has ever been firmer or more fixed against alliances than the present occupant of the White House. The element of promised and covenanted force, which exists in every alliance, is as distasteful to President Hoover as to any of his predecessors. His views on this topic are abundantly known to his intimates, and it is an open secret in Washington that they are as emphatically expressed by him in private as in public. Two of his public utterances of them should at this time be most especially considered and weighed.

Anglo-American Coöperation

In the famous statement issued jointly by President Hoover and Prime Minister MacDonald at the conclusion of their conferences in Washington it was explicitly said on behalf of the United States that its government "will never consent to be entangled in European diplomacy." Further, and even more importantly, in the famous speech delivered at Arlington on last Armistice Day the President said, regarding the international accomplishment of peace:

> There are to-day two roads to that end. The European nations have, by the Covenant of the League of Nations, agreed that if nations fail to settle their differences peaceably, then force should be applied by other nations to compel them to be reasonable. We have refused to travel this road. We are confident that, at least in the Western Hemisphere, public opinion will suffice to check violence. This is the road we propose to travel.

It can accordingly be stated safely that the continental European discussion of an Anglo-American alliance does not correspond in any way to any desire by the American people or to any intention by the American government. It nevertheless remains true that the Naval Conference at London contains within its possibility of failure the additional possibility that out of that failure may arise, not an Anglo-American alliance but an Anglo-American enforced coöperation in world emergencies.

The nature of such a coöperation will be examined later. It is necessary first to examine the nature of the possibility of failure in the Naval Conference which has just opened at London. It should in the first place be recognized clearly that the problem at London seems likely in practice to be one of naval limitation more than one of naval reduction. There may be reduction, indeed, below the levels of cruiser tonnage discussed at the Geneva Naval Conference in 1927. There may be reduction, indeed, in certain important naval expenditures through the postponement of the replacements of battleships. It would seem clear, however, that for the United States, for instance, a reduction of tonnage below the level of our present existing total fleet tonnage is not in any way actually contemplated.

Let us face frankly one of the reasons for this state of things. American statesmen may join English

statesmen as much as they please in declaring that war between the United States and Great Britain is impossible and unthinkable. They may say, as much as they please, that they are willing to reduce the American fleet to any size to which the British are willing to reduce theirs and that all that they seek in their naval relations to Great Britain is parity. They may say this over and over again; but, in the interest of frankness and candor and mere ordinary veracity, it must be asserted that they cannot and do not mean it.

Secretary of State Stimson, head of our delegation, which has been criticized by some as lacking naval experts.

Unlimited Reduction?

For what would the situation be if the American fleet, along with the British fleet, were cut down to really tiny proportions? What would the situation be if, to press the matter to a logical though extravagant outcome, the British fleet and the American fleet were reduced to twenty-five 6,000-ton cruisers apiece, with all other British and American fighting ships scrapped or sunk? Why, the situation would be that the twenty-five British cruisers plus the enormous British merchant marine would so far outclass the twenty-five American cruisers plus the extremely inferior American merchant marine that the United States would be immensely farther from parity with Great Britain than it is to-day.

Now there is no responsible American statesman who would be willing to come back from London with a treaty that reduced the American naval fleet to that extent. Any American delegate who tried to reduce American naval tonnage to the point at which the British merchant ships, ably armed for "defense" and abundantly supplied with naval reserve officers, would acquire the undisputed physical mastery of all the seas of all the world would be a delegate who perhaps would prefer to spend the rest of his life in London and forfeit all re-glimpsing of his American home.

The truth, then, is that there is a limit below which the American naval tonnage will not be reduced even should the British scuttle their whole naval fleet. Even at some cost to our esteem for ourselves as the world's champion naval reductionists, let us realize that we ourselves—and not only France and Italy—are obliged to maintain a certain amount of naval tonnage to be some sort of counterpoise to Britain's grand combined naval and merchant sea power.

Control of the Mediterranean

A second reason why the problem at London will be one of limitation more than of reduction is centered in the Mediterranean. There historic British naval predominance is viewed by France and by Italy with resentment and in an increasingly challenging spirit.

French and Italian cruiser tonnage, built, building, or appropriated for, now comes to 261,748, in comparison with the British corresponding total of 401,791. French and Italian destroyer tonnage, similarly calculated, comes to 203,342, in comparison with the British 198,400. French and Italian submarine tonnage comes to 127,023, in comparison with the British 75,521.

These figures indicate, in destroyers and submarines together, an actual French and Italian combined superiority of tonnage over Great Britain in those two quite related arms of what is somewhat disingenuously called "defensive" naval warfare. Added to this situation is the growing sensitiveness of France to the formal acceptance of any statistical assignment of naval inferiority and the growing ambition of Italy to accept no statistical assignment short of parity with France.

We contemplate, then, a Mediterranean perplexity in which Great Britain's desire to have a superiority over all the combined fleets of all Mediterranean countries seems to remain unabated but in which that policy of superiority is increasingly irksome to a France which sees itself at the head of continental Europe and to an Italy which sees itself, as it thinks, regaining Roman vigor and Roman majesty.

Out of such considerations, and others, Prime Minister MacDonald in his conversations with President Hoover at Washington did not officially speak of any reduction of British cruiser tonnage below the level of a total of 339,000. The American government, accepting that total as the British minimum, has proposed to answer it with an American total of 315,000, in which an inferiority in tonnage would be balanced, as it calculates, by a larger number than the British will build of cruisers of the largest 10,000-ton type.

© UNDERWOOD & UNDERWOOD

Reijiro Wakatsuki has the burden of getting a powerful navy for Japan without saddling heavy taxes on his race.

Cruiser Tonnage

That total of 315,000, however, is of course a bit greater than our present existing total of all American cruisers so far built or building or appropriated for or authorized. We at present have only 80,500 tons of cruisers built; we have 220,000 tons of cruisers building, appropriated for, or authorized. The grand total for us, then, in cruiser strength, present and prospective, is 300,500. That is 14,500 short of the tonnage that we shall be obliged to have in order to acquire fighting parity with the British proposed minimum of 339,000 tons of British cruiser strength.

In other words, in order to catch up in cruisers with the British on the basis of the MacDonald cruiser tonnage limitation formula, we must build all the 300,500 new cruiser tons which we have begun to build or which we have legislatively contemplated building, and then we must build 14,500 new tons more.

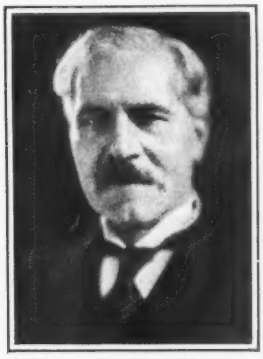
Such a result is a reduction below the levels discussed by the British at the Geneva Conference, but it is a vast advance over the present American cruiser

strength and expense. It would seem to follow, then, for us that unless new developments of a quite startling nature can be brought into being at London, our fate is to enter upon a considerable building program and to come away from London more blessed with a limitation of potential expenditures than with a reduction of present ones.

As that probable outcome of the affair becomes clearer and becomes closer, there is a strong disposition in American political circles to call into the controversy the argument of the American dollar. In wealth, it is pointed out, we have such a vast superiority that it might be possible for us to tame and moderate the naval ambitions of the secondary naval powers by threatening to build a positively overwhelming and, as it were, world-conquering and blood-curdling naval fleet—and by meaning the threat.

Dino Grandi, who will reflect at the London Conference the ambition of Mussolini to dominate the Mediterranean.

It is fully known, as a matter of fact, that the present American Administration is not too timid to use this argument. It of course wishes to see all possible naval security achieved at London through mutual agreement. It wishes to save the United States from unlimited naval competition by agreement, if possible. On the other hand, if agreement proves not to be possible, then the present American Administration is firmly determined to gain naval security for the United States by the full force of American money and by the full force of American steel mills and shipyards.



© UNDERWOOD & UNDERWOOD

J. Ramsay MacDonald follows up his limitations talks with President Hoover by personally heading the British.

New Construction?

The President in his recent message to the Congress said, "If we shall be compelled to undertake the naval construction implied in the Washington Arms Treaty, as well as other construction which would appear to be necessary if no international agreement can be completed, we shall be committed during the next six years to a construction expenditure of upward of $1,200,000,000."

That ascent is steep enough; but, if it is extended to include a vision of immediately coming years beyond the total of the six mentioned by the President, the height to which our naval "construction expenditure" will presently attain (in the absence of an international limitation agreement of a thoroughly successful sort) will be represented not by merely $1,200,000,000 but by as much as $2,000,000,000, in the considered opinion of our highest civilian authorities.

That $2,000,000,000, it can be securely stated, the American government is not only willing to spend but firmly resolved to spend, if naval security for the country can be achieved in no other way. This state of mind in the present American Administration is becoming gradually better known to the other great naval powers, and it influences them in varying degrees and in varying directions.

To Japan, which is relatively poor, the thought of an outright financial competition with the United States is infinitely depressing. The United States, if it wishes to do so, is obviously financially able to build a fleet which will be competent to cruise with imposing force in Oriental waters. A picture of that sort is perhaps highly persuasive toward the discouragement of any unduly active Japanese naval building policy in the next few years.

Similarly, the thought of a Wilsonian American fleet, evidencing in hulls and in guns the ideal set up by Mr. Wilson when he demanded at St. Louis an American fleet which would be "incomparably" the world's strongest, is far from agreeable to British ears and is in fact quite daunting even to the doughtiest British admiral.

France and Italy

Great Britain, not desiring to be outbuilt by the United States and yet knowing that the outbuilding is for the United States fully financially feasible, is necessarily disposed to try to temper its claimed naval necessities to the even greater necessity of not arousing the financial resources of the United States into strenuous successful combative construction.

With Italy and with France, however, the American dollar does not have quite so awing a clink. The Italian geographical situation and the French geographical situation are not so exposed to possible American dangerous contacts as are the geographical situations of Japan and of the British Empire. The French and the Italians are more able than the Japanese or the British to curl up, so to speak, on their native and acquired territories and let the Americans proceed to try to rule the waves if they want to. The French and the Italians may well say to themselves:

"We now see a ruling of the waves of the European Atlantic by the Union Jack of England. If that ruling of them is transferred to the Stars and Stripes, what of it to us? We would merely have exchanged one naval ruler for another; and, besides, the spectacle of the victors of Trafalgar subdued by new victors causes us no pain."

Conflicting Aspirations

The argument, then, of the existence of American financial resources and of American willingness to use them on a terrifying naval construction program terrifies least the very powers—France and Italy—that are most likely to feel obliged to go counter to American desires at London. To the Americans, who have arrived at an almost final formula of parity with the British and who confidently hope to arrive at a similarly successful formula of tonnage relationship with Japan, the unsolved Mediterranean perplexity caused by the existence of the great powers which

possess Mediterranean shores is a cloud upon an otherwise possibly perfect day. It is accordingly somewhat resented, and it tends to put the French and the Italians off into a class by themselves as Continentals who geographically and congenitally are given (it may be charged) to being bothersome and troublesome and who perhaps can be sacrificially promoted to the status of being the Conference's scapegoats for any of its difficulties or disasters.

France Looks to The League

This posture of affairs is solidified by the policy of France in respect of the League of Nations. France has dedicated itself to being the pillar of League prestige. France believes that naval armaments and land armaments and aerial armaments should be considered all together and that this consideration should be effected under League auspices. For France the Conference at London is a denial of what the French regard as the necessary interrelationship of armaments of all sorts and a denial also of what the French regard as the proper province of the League. It is beyond doubt that France will approach the Conference in a spirit not necessarily of destructive hostility but in the spirit nevertheless, let us say in flippant but not extreme comparison, of a Buddhist called upon to do his worshiping of God not in a Buddhist temple but in a Mohammedan mosque. Such a worshiper will be quite likely to let his thoughts wander; he may easily conclude that the services are being wrongly conducted, and he may readily decide to transfer his presence to the spot at which his true faith is located.

If the Conference Should Fail

It is out of such considerations that many observers have come to the definite conclusion that a full unanimous agreement at London is impossible. They assume that the preference of France for Geneva and the demand of Italy for parity with France will produce an absence of French and Italian signatures in any treaty that may be signed. They do not, however, always pursue and explore the political consequences of such an outcome.

Those consequences would spring primarily from the recoil which Great Britain would experience out of its continental European diplomatic efforts into a diplomatic effort directed primarily toward the United States.

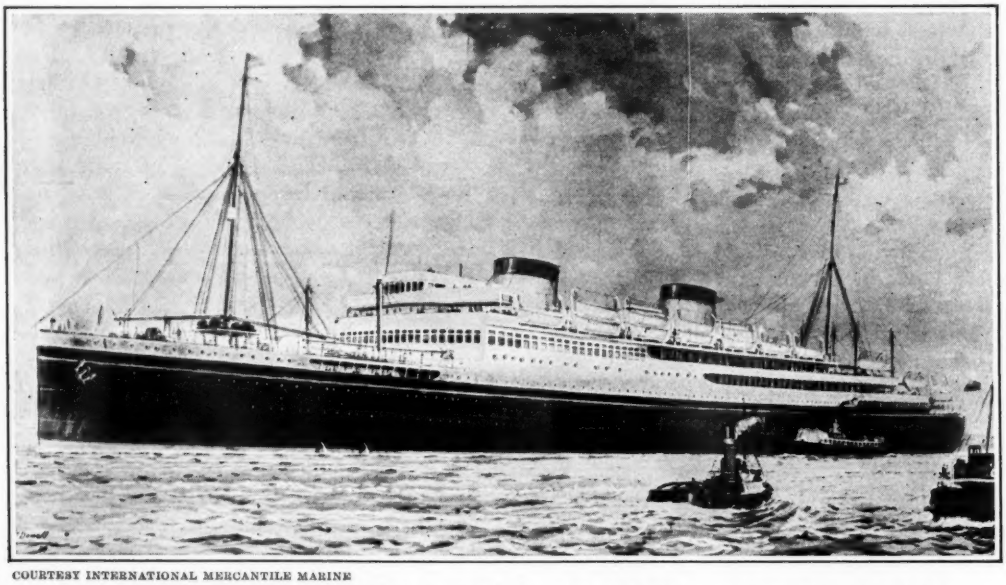
Having failed to reconcile its naval needs with those of France and of Italy, and having seen France attempt to carry the topic of naval armaments as well as the topic of all other armaments to the tribunal of the League, where France most particularly is possessed of numerous and influential Continental friends, Great Britain would once more be in the position in which the illustrious British Foreign Minister, George Canning, found himself when, in the House of Commons in 1826, he exclaimed:

"I call in the New World to redress the balance of the Old."

The Kellogg-Briand Peace Pact

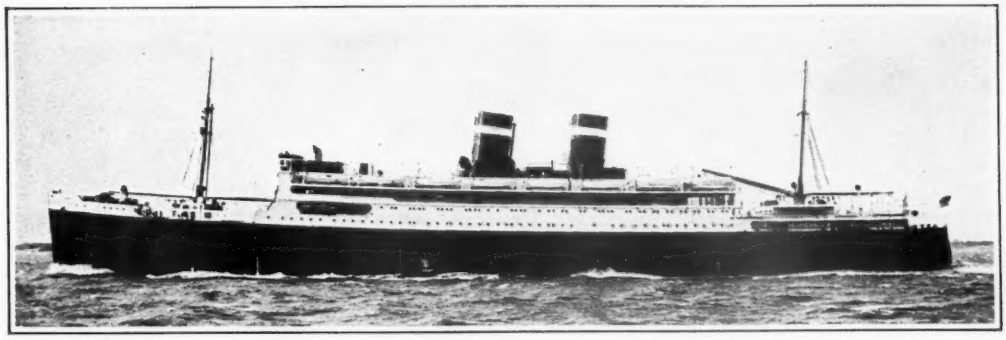
Troubled and uneasy regarding the Continent, fearful regarding the Mediterranean, sensible of insecurity in its affairs with its nearest neighbors, Great Britain would be propelled more and more into seeking the counsel of the United States in the international developments of the British Commonwealth of Nations. Specifically, instead of stressing the maintenance of international peace in company with France under the egis of the League of Nations Covenant, Great Britain would be driven increasingly toward seeking that peace in company with the United States under the new rising sun of the Kellogg-Briand Peace Pact.

The notes of the American government to the Russians and to the Chinese regarding the Manchurian



COURTESY INTERNATIONAL MERCANTILE MARINE

The latest addition to John Bull's fleet, the new Britannic, of 26,840 tons, largest turbo-electric ship ever built in England. The danger of unlimited naval reduction on our part is seen when one considers the great British merchant marine. A small American navy would be ineffectual against the most powerful merchant fleet in the world, armed as it indubitably would be for transport, blockade, and "defense."



EDWIN LEVICK

The Pennsylvania, 33,375 tons, recently commissioned for the Panama Pacific Line for passenger and freight service between the East and West Coasts. It is the largest vessel ever built in the United States. Had we a few more ships of such size flying the American flag, the United States government would be in a far better position at London to consider the question of parity on an unlimited downward scale.

affair, whatever those notes may have failed to do in Manchuria, have done much in London to cause the British to indulge themselves in the hope that the Americans, in their own peculiar way, have made up their minds to take a livelier interest than heretofore in the perpetuation of peace in general and as a whole. There is also no doubting the proposition that the Kellogg-Briand peace pact, though bearing the name of a French foreign minister, is characterized by a looseness and a vagueness and an openness to different expedients in different circumstances that is much more congenial to the British than to the French temperament. There is accordingly now, in the peace pact in question, a framework within which British and American international coöperation might develop and enlarge without having the name and also in fact without having the character of an alliance. It would not be an alliance, since no promise or assurance of force in any circumstances would be involved; and yet, through consultations regarding measures to be taken in emergencies threatening the world's peace, it might be a coöperation in which the two great English-speaking governments would frequently be seen choosing and taking the same course before the eyes of a pleased or displeased world.

Reasons for a Compromise

We come in that prospect to the final argument which may weightily be brought to play in the balances of the London Conference's destiny. The fear of the American dollar and of an "incomparably" massive and potent American fleet may not budge the French at all from their policies regarding armaments and regarding the League. They may possibly, however, be less disposed to insist wholly upon their own views if it should become reasonably certain that failure at London for the Conference as a conference would be succeeded by what would look to French eyes to be in effect an English-speaking or Anglo-Saxon domination of world issues. The concurrence of Great Britain and of the United States and of their resources would necessarily wear the appearance of such a domination and, in spite of its not being an alliance, would be regarded as such by the French.

That France would thereupon be pleased and would applaud is a supposition that would do great violence to common sense. The common sense of the matter is that France would look upon the eclipse of the League Covenant by the Kellogg-Briand peace pact and the eclipse of Anglo-French peace sanctions by Anglo-American peace consultations as an eclipse of France itself in the orbit of first-rank world problems.

France May Change Her Tune

It is by many calculated that thereupon, when once such a possibility, if it exists, has become apparent to the French delegates at London, they may bestir themselves to help to try to find a solution of some difficulties which now seem extraordinarily baffling. It is calculated that possibly the French may find that concessions at London, while slightly impairing the prestige of Geneva, will ultimately impair it less than an obduracy which, while making the London Conference partially fail, would evoke an orientation of Great Britain toward the United States and thus make the League walk a path toward potential total failure. To preserve Great Britain to the Continent, and to save a great deal at Geneva, the French may be willing, in this calculation, to lose a little at London.

Such are some of the observations and speculations which will fill the air as the London Conference gets under way. Prophets who predict that the Conference will result in an easy complete success are surely observant more of aspirations than of actualities. Prophets, on the other hand, who, on the actualities and on the technicalities instantly existing, predict for the Conference an unavoidable complete disruption are perhaps not fully observant of some of the more remote political considerations which in the end may be powerfully efficacious toward agreement.

A Treaty Signed by All

In any case, there would seem to be two certainties upon which the Administration can count. It will not leave the Conference friendless, since its efforts there will have earnest British support; and it need not fear political reprisals at home during the Conference, since its endeavors at London will have the substantial support of all American political groups. Armed with those two certainties, it may be able to work ahead at London toward achieving its highest aim—a treaty signed by all five powers there assembled.

© PUBLISHERS PHOTO SERVICE

An airplane view of recent excavations around the Sphinx. For years it was hoped that this famous animal held deep in her innards a secret burial chamber or a shrine rich with treasure. Near here, in the Temple of the Sphinx, was discovered a dump heap for statues which yielded, among other things, the famous statue of Khephren, one of the great masterpieces of the ancient world.

THE ROMANCE OF EXCAVATION

By ARTHUR WEIGALL

WHEN I first went out to Egypt as assistant to Prof. Flinders Petrie in his excavations at El Arabah, the ancient Abydos, I expected to dig a hole in the sand, find a doorway at the bottom, and walk through it into the presence of forgotten kings and queens—without any trouble at all. I was not out of my teens at the time; and it was thus that my youthful imagination had interpreted the stories I had read of the great discoveries made by Mariette, Maspero, De Morgan, and the other famous pioneers.

Actually my experience during that first season's work was the roughest and most exhausting of my life, and it was so filled with disappointments that the few thrills it afforded are overshadowed in my memory by a prevailing gloom. I was taken by the professor to an untidy patch of earth and potsherds, into which a hundred native workmen were digging large holes; and for the next few weeks my task was to map the position and depth of the quite uninteresting odds and ends which came to light and, at sunset, to measure up the work done, so that the professor could pay the men by the piece.

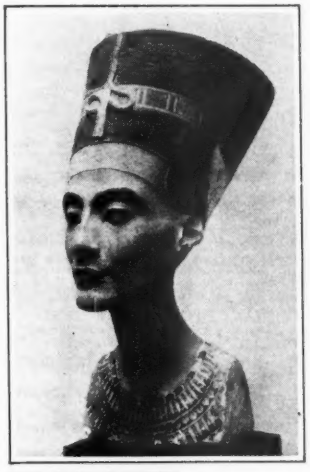
As the holes grew deeper the hard and dusty earth became blacker and more moist, until at last the men were squelching and splashing in a liquid mud pie. Then, one blessed day, the professor announced that our researches upon this particular site were complete—that we had cleared the sacred area of the local shrine of Osiris down to prehistoric level and had ascertained some very important facts in regard to the plan and extent of the first settlement.

Somewhat bewildered, I was then taken to a bare and sun-scorched area of sand at the back of the famous temple of Abydos and told to set the men to digging one big hole, there being some indications that there was something or other to be found at the bottom. For many weeks, therefore, I sat each day on

¶ Four thousand years ago the high priest closed the sepulcher and laid the great Pharaoh to rest. Greece came. Christ was crucified. Rome fell. Countless millions lived and died. . . . How would it feel, after months of toil, with slim prospect of success, to stumble upon the ruler's tomb? A famous Egyptologist here describes the thrill that comes but rarely to those who tabor in the Valley of the Kings.

a rock and watched the clouds of dust rise into the pitiless sky; and at length the hole was so deep that the baskets of shoveled sand had to be passed up to the surface by a chain of some thirty boys, ranged one above the other upon the steep slope of the side.

Then the professor declared—what subsequently proved to be the fact—that we were evidently coming down to the roof of a subterranean temple, but he regretted that funds would not permit its further excavation that year. I was then taken up into the desert, some three miles from our camp, where there were indications of a more promising ancient cemetery beneath the sand; and I was told to cut trenches and dig trial pits over an area of some four or five acres, in order to get the hang of the place.



METROPOLITAN MUSEUM

The head of beautiful Queen Nefertiti, now in Berlin, which was discovered in the studio of the royal sculptor of the time of Akhnaton.

Every morning before sunrise I marched my men across the black desert to this site; all day I walked about moodily contemplating their barren labors; and every evening I marched them back to the camp. Gradually the field of our search became concentrated upon a single spot, where once more we found ourselves digging an enormous hole in the sand; and at last one day we laid bare the mouth of a tunnel cut into the underlying rock at the bottom of the pit.

Discovered—Too Late!

This appeared to be a royal tomb, and my original expectation of a dramatic meeting, face to face, with a Pharaoh seemed to be about to have a delayed fulfillment of some sort. But when we had wormed our way along some 650 feet of the partly choked tunnel, and had ourselves been nearly choked by dust and bad air, we found the burial chamber wrecked and empty. Evidently it had been ransacked over and over again by robbers in ancient times. The natives from the nearest village, however, thinking that we might have overlooked some find, raided the place the following night, and in the ensuing fight I received a black eye and a bullet through my hat before the raiders fled.

In other parts of this area there were some big mounds which marked the sites of the tombs of great court officials who had been buried around their royal master; and we now turned our attention to these. The first sepulcher we tackled, however, proved to have been robbed, likewise, thousands of years ago; and at the bottom of the second, after weeks of digging through blown sand, we found a French newspaper of about the year 1860, showing that Mariette's excavators had been there before us.

The professor then transferred me to a cemetery site close to our camp, where there was hope of finding some small graves which, without providing any spectacular discoveries, might be expected to supply a profitable number of small objects for the show cases of the museums subscribing to our expedition. The first of these graves which I entered, however—a subterranean dome of brick—collapsed about my head, and I was dragged out of the sand and débris only after I had given up all hope of seeing ever again the light of the sun.

Another vault proved to be full of dead cats, which I brought back to the camp and placed near our tents; but after a day or two we could stand their malodorous presence no longer, and we buried them again at dead of night with more haste than reverence. Yet another grave, in the form of a ten-foot shaft, nearly

LINDSLEY F. HALL

The Valley of the Kings, from near the tomb of Queen Hatshepsut. The author helped to find the tombs of Yuaa and Tuiu in the valley to the right. In the vicinity of the path in the left background, Mr. Weigall found the tombs of Tiy, Akhnaton, and Haremheb; while at the top of the path the bodies of no less than six Pharaohs were found in one tomb.

caused the death of one of my colleagues, who, being taken ill when we were all away at our work, wandered out into the dazzling sunlight and fell into it. I found him there at eventide blindly struggling to drag off his sun helmet, which had been jammed over his ears and eyes when he had fallen on his head while attempting for about the hundredth time to climb out of his prison.

A Season of Discouragement

These and similar misadventures and disappointments constituted the sorry tale of my first season's excavating. But I was fortunate enough to be chosen afterward to work with Professor von Bissing in the less strenuous task of copying and translating the inscriptions in some of the temple tombs at Sakkâra, the necropolis of old Memphis; and after a year or two I had the extraordinary good fortune, young as I was, to be appointed inspector-general of antiquities to the Egyptian government, with my headquarters at Luxor, the ancient Thebes.

In this capacity it was my business to inspect the work of whatever excavating expeditions were carrying on their researches in Upper Egypt; and as I was supposed to be sent for to be present on behalf of the government at every expected discovery, or to have the first view of any important find which had chanced to be made, the ensuing years were full of thrills for me. Moreover, excavations were being carried on every cool season in the Valley of the Tombs of the Kings, where the tomb of Tutankhamen was ultimately found; and as this undertaking, though partly financed and conducted by a wealthy American gentleman, Mr. Theodore Davis, was officially a government affair it was my business to supervise the work and to take actual charge whenever a tomb was opened.

Digging in this famous valley, of course, has been for many years the plum of the excavating business. In the first place, the excavators do not have to live under primitive and even dangerous conditions, as I did, for example, at El Arabah during my first season's work. Luxor is a winter resort, with beautiful hotels and villas; and to ride each day along the winding road which leads amid the desert hills up to the royal burial ground is a pleasant way of taking one's exercise. In winter, though the sun is hot the shade is cool; and there are few forms of picnic so delightful as that of an alfresco meal in a pool of blue shadow, with the magnificent cliffs and hills round about soaring, golden in the sunlight, up to the cloudless and azure sky.

And Then the Fun Begins

The work of excavation itself is here child's play. One merely has to employ a few natives to scratch about, removing the surface débris from the lower slopes of the Valley's sides until the face of the underlying rock is exposed. Patch by patch the rock is laid bare; and if the mouth of a tomb is not discovered the débris is dumped upon the examined area, and one proceeds to clear a further patch. Nobody knows exactly where the hidden tombs may be situated, and one can only go on skinning the encumbered foot of the hill slopes systematically until a cutting in the rock sets the excavators twittering with excitement, and presently steps leading down to a blocked-up doorway are cleared.

Then the fun begins, and only then is the knowledge of the expert required; all the preliminary work can be safely conducted by amateurs reclining in deck chairs.

Here in the Valley one starts with certain assured facts. It was the royal burial ground only from the early part of the Eighteenth Dynasty (about 1520 B.C.), to the end of the Twentieth Dynasty (about 1090 B.C.), and the exact number of Pharaohs who reigned between those limits, and whose tombs are therefore situated in this area, is known. The majority of these sepulchers have been robbed in ancient times and now lie open; and in my time we knew exactly how many Pharaohs' tombs were still hidden.

All these missing tombs were found during my inspectorate, with the exception of that of King Tutankhamen; and to-day there only remain to be discovered the possible tombs of members of the royal family, other than reigning sovereigns, who, for exceptional reasons, may perhaps have been buried here in the sacred area. There is, it is true, one Pharaoh, Smenkhkara, the half brother of Tutankhamen, whose resting place has not been found; but as he lived at a time when the court was in residence elsewhere it is probable that he was not buried in the Valley at all, though his body may have been brought here afterward and deposited in somebody else's sepulcher.

On Guard With Gun in Hand

Nobody knows, as I say, in which part of the Valley to look for the undiscovered tombs; and future work in this region will consist, as before, in leisurely clearing away the surface accumulations until some chance discovery shall stir the excavators out of their pleasurable inactivity and shall set them the really difficult and exacting task of handling the objects found.

Discoveries in the Valley come so suddenly. A few days after I had been appointed inspector-general, and while my predecessor, Mr. J. E. Quibell, was still in residence, the mouth of a tomb was unexpectedly laid bare, and he and I instantly found ourselves involved in what proved to be many weeks of absorbing hard work. A flight of steps cut in the rock led down to a doorway blocked by a wall of stones, in the upper part of which was a hole big enough to permit us to obtain a glimpse of a corridor sloping steeply down into the darkness. We could just see another blocked doorway at the bottom, and when we had effected an entrance and had descended to this second walled-up doorway we found a hole in it through which we could look, with the help of our electric lamps, into a small chamber stacked to the ceiling with gorgeous furniture ablaze with gold.

Professor Maspero, my chief, happened to be in Luxor at the time, and we postponed our entrance into this veritable treasure house until next day, when he could come up to the Valley; and that night I sat on guard, gun in hand, over the mouth of the tomb, just about as excited as I have ever been in my life. I was little more than a boy at the time, and the weight of my responsibility very nearly throttled me.

On the following morning, when our party was collected, we climbed one by one over the wall and went scrambling down to the second doorway, from which we removed sufficient of the stones to allow us to effect an entrance. Our first object was to look at the inscriptions on the side of the catafalque to see whose tomb we had discovered; and here we read the names of Prince Yuaa and his wife, Princess Tuiu—well-known historical characters, the father and mother of the great Queen Tiy, wife of Amenophis III (1406-1370 B.C.)

Lifelike Mummy of a Prince

It was evident at once that thieves had been in the tomb before us, for the lids of the coffins had been lifted off, and the bandages had also been stripped from the faces of the two dead bodies—clearly in order that the gold necklaces around their necks might be removed; and there was evidence to show that the robbery had been carried out immediately after the burial, probably by the "undertakers" themselves.

In spite of the mass of perfectly preserved and wonderful funeral furniture all around, I could not take my eyes off the Prince's face. There he lay, like an old man asleep, his white hair thrown back from his wrinkled forehead, his eyes closed, his great beak of a nose and his faintly smiling mouth looking as though the breath were still in his lungs, and on his chin an unshaved scrub of short hairs, indicating that he had been too ill to be attended by a barber on the last day of his life and that after his death the embalmers had not troubled to shave him.

I held my lamp above the beautiful old face, and the trembling of my hand caused a flicker of shadow to move beneath his eyelashes, so that I started back, almost thinking for a moment that he was about to open his eyes. It was beyond the power of thought to realize that he had died before Greece or Rome had been heard of; before Moses, even, had led the children of Israel out of Egypt.

The Princess's face was not so startling, but she too was well-preserved, and her tumbled gray hair, wrinkled skin, and expression of worry gave her a semblance of life which bridged the ages. She was astonishingly like somebody I knew.

The objects buried in this chamber were of a very varied character. In one corner stood the Prince's chariot; beside it were two comfortable-looking beds, with springy mattresses of crisscrossed string. Near by were two charmingly decorated chests or jewel cases wherein we hoped to find some jewelry; but on raising the lids we found them empty—the work of the thieves again. There were three or four armchairs, including one which, so the inscription told us, had been presented to the Prince by the daughters of Queen Tiy and King Amenophis. One may suppose that the girls had loved their old grandfather and had wanted to give him something useful to take with him into the next world.

Preserved in an Alabaster Vase

Boxes, chests, traveling trunks, tables, stools, soft cushions, vases, utensils, walking sticks, sandals were heaped up around the chamber. On one of the tables

© PUBLISHERS PHOTO SERVICE

Many discoveries are the result of careful work and long planning, but sometimes an excavator is lucky enough to chance upon an important find. So it was with Monsieur Legrain, who, digging in the Temple of Karnak, happened on a sort of dump heap of statues that furnished some of the finest items now in the Cairo Museum. View of the temple. The discovery was made near the pylon in the right background.

was an alabaster vase containing what appeared to be thick honey, still liquid after three thousand years and more. We sent the stuff down to Cairo afterward, to be analyzed; it proved to be castor oil. In some of the boxes we found legs of mutton, haunches of beef, trussed goose, loaves of bread, fruit, and other eatables; and there were some jars which had once contained wine.

The excitment of a discovery of this kind is extreme, and as we moved about the chamber our whispered exclamations alone broke the tense silence. Suddenly an American lady in our party burst into tears, and shortly afterward Mr. Davis, who had initiated the work, uttered a groan and went off in a dead faint. I may add that, after he came round, I expressed my regrets at his indisposition; whereat he replied, "That's all right! I paid a pretty big sum of money for that sensation."

Sheets of Gold

In the following year we discovered another tomb of a similar kind, wherein Queen Tiy herself had been buried; but her body had later been removed and that of her son, the Pharaoh Akhnaton, interred there in its place. The coffin was most gorgeous, being incrusted all over with semiprecious stones set in gold—a dazzling sight in the light of our electric lamps; and when the lid was removed we found the mummy wrapped round with sheets of pure gold. Unfortunately the body had been drenched with some perfumed liquid by priests who had not realized the ruinous effect it would have upon the painstaking work of the embalmers.

Arthur Weigall, who, as inspector-general of antiquities to the Egyptian government, had the good fortune to be present at many important discoveries during recent years.

Two seasons later we found the once magnificent tomb of the Pharaoh Haremheb, one of the immediate successors of Akhnaton; but it had been plundered in ancient times, and after we had scrambled down wrecked staircases and corridors encumbered with masses of stone fallen from collapsed roofs and columns and had picked our way through shattered halls and along echoing passages we found the royal coffin empty of all but a few bones.

But near the mouth of this tomb we discovered a rock-cut chamber wherein the Pharaoh's dog and pet monkey had been buried. Originally they had been embalmed, but robbers in ancient times had stripped them of their embalming bandages and, as a joke, placed them so that the dog's nose and the monkey's were touching. "Well," said Mr. Davis, as we stood staring at these two perfectly preserved friends of long ago, "it has taken three thousand years for anybody to see *that* joke."

Thus our researches proceeded, winter after winter; but at length Mr. Davis died, and I gave up my work in Egypt at about the same time. Later Lord Carnarvon took Mr. Davis's place, employing Mr. Howard Carter as his trained excavator; and after a few fruitless years the latter suddenly laid bare the mouth of the tomb of Tutankhamen, which proved to contain the richest mass of antiquities ever discovered together in Egypt.

Every Pharaoh's tomb in the Valley must once have contained objects just as magnificent and costly; but Tutankhamen's was the only one which had escaped the attentions of the thieves of long ago. In my time we had dug all around it, and even immediately above it, but we missed it by a few feet—a fact for which I have few regrets, since Mr. Carter, and the members of the Metropolitan Museum of New York who gave him their assistance, carried out the tedious and difficult business of handling and removing the objects far better, I think, than I would have done. It has been a long and grueling task and one which, except during the first excitement, is not to be envied them.

A great discovery which remains to be made somewhere in this vicinity is that of the tombs of the priest kings of the Twenty-first Dynasty. There is much evidence to show that these rulers were interred in this neighborhood, probably in one of the adjoining valleys; but no systematic search has yet been made for them. Some of their bodies, removed in ancient times from their tombs, have been found, however; and this brings me to the story of one of the greatest discoveries ever made in Egypt.

I must explain, to begin with, that the plundering of the royal tombs became so frequent and so audacious during the decline of the pharaonic power in the ninth century B.C. that the authorities decided to disinter all the royal bodies they could find and to gather them together in a single hiding place, where they might be expected to be out of danger of damage and insult. A disused tomb at the foot of a precipice some distance from the valley was selected: it consisted of a perpendicular shaft about forty feet deep, leading to a tunnel 220 feet long, at the end of which, right in the heart of the hill, was the burial chamber.

A Peasant Who Struck it Rich

Here the endangered mummies were interred, and here they lay undisturbed throughout the centuries, until in about the year 1870 a native peasant, named Abd'er-Rasoul, chanced upon the shaft, secretly dug his way down to the tunnel, and for the next ten years or so lived from the proceeds of the sale of the small objects he found there.

At length the continual passing of objects inscribed with famous royal names into the hands of the dealers began to arouse suspicion; and at last this peasant was arrested and made to confess where his Aladdin's

© PUBLISHERS PHOTO SERVICE

Digging in the Valley of the Kings, for centuries the royal Egyptian cemetery, where many of the most important finds have been made, is the plum of the excavating business. There one does not have to live in tents but each night returns to the winter resort of Luxor with its beautiful hotels and villas overlooking the Nile. The Winter Palace at Luxor, which has sheltered many a weary, disappointed excavator but almost as many who came tingling with the thrill of successful and important work in the valley near by.

Cave was situated. A young German named Brugsch, brother of the famous Egyptologist, was then sent up to Luxor to examine the tomb. I knew both him and Abd'er-Rasoul well when they were old men and often talked with them about the discovery. Herr Brugsch told me that he very nearly fainted when, at the end of the tunnel, he beheld all these coffined mummies of Egypt's greatest Pharaohs lying in rows upon either side of the vault. Here were Amenophis I, Thutmosis I and II, Sethos I, Rameses II and III, and dozens of others, among them some of those rulers of the Twenty-first Dynasty referred to above, whose undiscovered tombs, therefore, must be not very distant.

Queen Hatshepsut's Secret Tomb

The bodies were brought to the surface and carried to a steamer upon which they were transported down the Nile to Cairo; and as the vessel set out with its royal cargo the natives on the river bank paid them full funeral honors, the women uttering those traditional wailing cries which must have been heard at the burial of these kings thousands of years ago.

In 1899 the bodies of Amenophis II and III, Thutmosis IV, Rameses IV, V, and VI, and others were found in a Valley tomb which had likewise been used as a hiding place; and it is always possible that yet another hiding place will be found there, for some of the mummies are still missing—for example, that of the great Queen Hatshepsut (1490 B.C.)

This queen had a very checkered career, and during the early years of her reign she lived under the menace of a rival faction at court. She therefore decided to locate her tomb in some place so secret and inaccessible that, in case her enemies desired after her death to scatter her bones to the four winds, they would not be able to find them. A distant valley, deep in the desert hills, was selected as the site; and here she caused her sepulcher to be hewn out of the rock high up in the precipitous face of a cliff, more than two hundred above the bed of the valley below, and some 137 feet down from the top. A flight of steps and a long tunnel led to the burial chamber, and here a fine sarcophagus was hauled and dragged into position. It is the most astonishing tomb in Egypt; and its clearance a few years ago was due to the skill and daring of Mr. Carter, who was perilously lowered down to it from the top of the cliff.

The queen, as a matter of fact, was never buried here. When her position became more secure she made a second tomb for herself in the royal Valley, the burial chamber being approached by a tunnel no less than 700 feet long and with a declivity of 300 feet. This too was found by Mr. Carter; I can remember seeing him, sometimes, coming up from his work at the bottom, green in the face and so near to unconsciousness that he could only lie flat on his back while his forehead was sponged with water.

An Unwanted Escort of Bats

I remember once being taken to a somewhat similar but less extensive tomb by a native who had kept its existence secret for some years. A small hole had been left open at its mouth, and swarms of bats had made it their home; and as I crawled down the winding tunnel these creatures dropped from the rock above me and flew downward, until the roar of their wings in the burial chamber where they were pent up was like

(*Continued on Page 102*)

ATTORNEY GENERAL MITCHELL AND A DIFFICULT JOB

By THEODORE G. JOSLIN

"THE administration of justice is not a partisan matter." These are the words of William D. Mitchell, Attorney General of the United States, who is making the administration of justice the dominant purpose of the Department of Justice. Political influence means little to this man, an "old line" Democrat who is the chief law officer of an unquestioned Republican Administration.

The Attorney General is conducting himself in the public service as he did in private practice. Throughout those earlier years, which brought him state and national recognition, he refused to accept a case in which he did not believe. When he came to Washington in 1925 as Solicitor General of the Department, it was with the understanding that he would contest for the government only when he believed the government was in the right.

During the three years that he held the office, arguing so ably that outstanding justices and attorneys became his principal sponsors for the Cabinet portfolio he now holds, he, or his subordinates acting at his direction, went before the Supreme Court of the United States on thirty-four occasions and expressed the solemn opinion that the lower courts had erred in rendering decisions in favor of the government. Equally important and equally significant, the Supreme Court accepted the recommendations made in thirty-three of the cases. It was not that he made the government an easy adversary. He contested tooth and nail when he was convinced the government was in the right, but when he believed it in the wrong he said so unhesitatingly.

Appeal to Reason, Not Emotions

His independence in legal as well as political affairs is not reflected by his outward appearance. Rather than the stern-visaged jurist so commonly associated with men high in the legal profession—as Attorney General he has climbed to the leadership of the Bar—he is still very much a boy. The flush of youth is upon his cheeks, even though he is fifty-five years of age. His eyes are kindly, twinkling behind thin-rimmed spectacles. Of medium height and build, he does not give the impression of great strength. Yet determination and fearlessness are disclosed as his outstanding characteristics when he begins talking with a few friends, from a public rostrum, or before the bar of justice. He is not the type to move juries or to captivate the imaginations of men. Rather he is the intellectual type, appealing almost entirely to reason and at his best before appellate tribunals, where his work is calm, his expositions temporate, and his arguments possessing the power which moderation and balance give.

At work or at play, intensity marks his efforts. But moments of relaxation have been few and far between since last March fourth, when he took the oath of office as Attorney General. He assumed the post at a time when the task of bringing about obedience to law and satisfactory administration of criminal justice in the courts never loomed larger as a governmental problem. He applied himself without delay to improving the personnel and efficiency of the United States attorneys and their assistants; simultaneously, he turned his attention to improvement and reform in the Federal prison system.

"Only When Justice is Done"

About the same time, too, he initiated moves to speed the work of the courts. He realized that the court dockets in many judicial districts were clogged and that the trial of criminal cases and of padlock injunction proceedings under the Prohibition Act were delayed. Experience has taught him that delay means disappearance of witnesses, dissipation of the strength of the government's cases, loss of respect for law, and inefficient law enforcement.

Therefore he laid plans for increases in the forces of the United States attorneys, marshals, and clerks of court wherever needed, with some provision for a higher standard of pay. His immediate purpose was to remove the mechanical delays resulting from inadequate forces in any and all of these offices. Necessary appropriations to carry out the reforms have been requested of Congress so that dockets may be brought up to date and all criminal cases promptly tried and disposed of.

A student of the work of the courts, the Attorney General believes it is most significant that the three largest groups of convictions are those obtained under Acts of Congress placed on the statute books within the past twenty-five years. Of some 10,000 Federal penitentiary prisoners under confinement at one time, more than 2,700 have been confined for the violation of statutes relating to narcotic drugs; about 1,800 for disregarding the Prohibition Act; and 1,300 for transporting stolen automobiles in interstate commerce. These figures, he believes, present striking illustrations of the extent to which the Federal government is entering new fields.

However, they fall far short of showing the enormous number of cases, civil and criminal, that are always pending in the Federal courts. Such litigation involves not only property rights but personal liberty.

"The purpose of the Department of Justice," says the Attorney General, "is not merely to win. In this respect, the position of the government differs from that of most litigants. The government is usually litigating with its own people. It cannot afford to win at the expense of justice; it can win only when justice is done."

Thus his insistence, from the day he came to Washington, that the government be sure of its case before it proceeded from the lower to the higher courts and his willingness, as so frequently demonstrated, to advise the Supreme Court that he believed errors had been committed in preliminary proceedings or to submit the question to the judgment of that highest of all judicial tribunals.

Any impression that the Department of Justice is confined to the national capital is a mistaken one. True, its headquarters and its chief officers are to be found in Washington, but it has officials and agents in every state of the Union. All United States attorneys and their assistants throughout the United States are in the Department, discharging their duties under the direction of the Attorney General, who not only heads the Department but is the legal adviser of the President and the members of the Cabinet.

It is noteworthy that the Attorney General has a greater influence over governmental operations than any official other than the President. This is because the Department of Justice, by the legal opinions it gives to the President and Cabinet officials, as well as to lesser officers, and by the position it takes in the courts on questions of law affecting governmental matters, guides the activities of all the executive departments. Moreover, it establishes rules, by judicial decision, which have a lasting effect upon the course of government action. For these as well as other reasons, the Attorney General, forgetting he is a Democrat serving under a Republican Administration, asserts with all his vigor that the administration of justice is not a partisan matter.

Because of his vast administrative duties, Colonel Mitchell—the title dates back to 1918, when he held that rank in the Minnesota National Guard—has not the time to give personal attention to all the routine duties of the Department or to conduct cases in court.

Varied Duties

He must necessarily delegate authority to subordinates. Heading the list is the Solicitor General, whose principal function is supervision over all the civil and criminal litigation of the government in the appellate courts and particularly in the Supreme Court. He has charge of the government business in that court, which constitutes from twenty-five to thirty-five per cent of all the business before it.

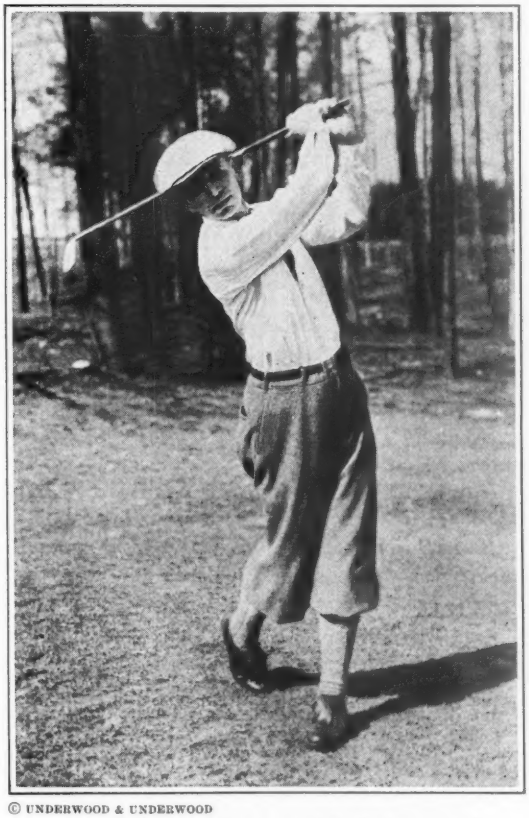
In addition to the Solicitor General there are a number of Assistant Attorneys General, each at the head of a separate division. There are the antitrust division, having charge of the antitrust and commerce law cases and various other related matters; the administrative division, to which all administrative matters are referred; the division of taxes and prohibition; the division in charge of defense of suits against the United States in the Court of Claims; the division in charge of public lands and Indian affairs; the division in charge of criminal prosecutions; the division in charge of admiralty, shipping litigation, war-risk insurance, and many other related matters; the division in charge of customs cases, with headquarters in New York City; and the division dealing with pardons and paroles and all applications for executive clemency. Then there is the bureau of investigation, whose duty it is to investigate and collect evidence of alleged offenses against the laws of the United States.

Enforcing the Prohibition Laws

Another bureau may be added shortly that will command more attention than all the existing bureaus and divisions, for the reason that, if created, it will deal with the most controversial of all subjects since slavery—prohibition enforcement. The action will be taken if Congress respects the recommendation made by President Hoover in his annual message in December. Ever since the adoption of the Eighteenth Amendment to the Constitution a decade ago, part of the task of enforcing prohibition laws has rested in the Department of Justice and part in the Treasury Department. During that period the detective agency which has searched out offenders of the law and has obtained the evidence on which the government has proceeded has been within the jurisdiction of the Treasury Department, while the trial of all cases instituted in the Federal courts has been conducted by the Department of Justice, either through an Assistant Attorney General or United States attorneys.

Attorney General Mitchell believes that the change, if made, will end much of the criticism which has been aimed at the Treasury Department. At least the bureau, under his direction, will diligently seek out offenders of the act and will coöperate with other branches of the department which will proceed legally against the offenders.

The Department's program of law enforcement makes no exception of the antitrust laws. This assertion is deserving of emphasis if for no other reason than that little has been done in recent years to press antitrust litigation.



© UNDERWOOD & UNDERWOOD

Colonel Mitchell plays one of the best games of golf in official Washington. He has held several amateur titles. On the first tee at Burning Tree, Washington, soon after assuming his new work.

The Attorney General first broached the subject when he addressed the annual meeting of the American Bar Association in Memphis, Tenn., last October. His remarks occasioned nation-wide attention at the time. The thought to which he was giving expression was that, in the matter of law enforcement, there is no distinction between antitrust laws and any other acts of Congress. This, a subject of vital importance to the country, interests him deeply. Here are his opinions in his own words:

"There have been many changes in economic conditions since the antitrust laws were passed. Much discussion has arisen as to whether some modification of them is desired to meet modern business conditions. The antitrust laws are founded on the proposition that avenues of industrial opportunity must be kept open as far as possible to the initiative of the individual citizen. The alternative is bureaucratic regulation. That is not an attractive alternative. At any rate, until the political philosophy underlying the present antitrust laws has been abandoned by Congress, it will be the duty of the Attorney General to enforce those laws, and we shall undertake to do this without prejudice and with fairness, but with firmness."

© UNDERWOOD & UNDERWOOD

Attorney General Mitchell.

Federal Prisons

There is another subject coming within the jurisdiction of the Attorney General which is most interesting to him—namely, the Federal prison system. Approximately twenty thousand men and women are in confinement to-day for violations of Federal statutes. Those sentenced to a year or less are "boarded" by the government in state or county jails. They comprise about half the total. All others are sent to the five Federal institutions, which are badly overcrowded.

Colonel Mitchell has ascertained that more than ninety-eight per cent of the Federal prisoners are ultimately released and returned to society. Aside from the consideration of humane treatment of prisoners, he believes that the public interest requires that they not be allowed to degenerate physically, mentally, or morally, but that they be built up so that, when returned to society, as many of them as possible shall become useful citizens.

It is plain to him that the first essential is to provide additional institutions. He agrees with penologists that construction of more prisons, not enlargement of existing ones, is the proper course. He believes there should be a new Federal penitentiary in the North Atlantic states; a new industrial reformatory to serve the territory west of the Mississippi; and three Federal jails or houses of detention in the North Central states, on the Pacific Coast, and in the central South.

A second essential improvement, in his opinion, is to provide employment for prisoners. Opposition by capital and labor on the ground that products of convict labor compete with private business is selfish, in his opinion. The products of Federal prisons, he emphasizes, would be used only by the government. The quantity would be too small to be an important factor in competition with private enterprise.

"Why," he asks, "should thousands of able-bodied men and women in Federal institutions not be required by their labor to help support themselves?"

He answers his own question thus: "It is inhuman to allow prisoners to languish in idleness. They should be kept busy while confined and taught useful occupations, so that when released they may have a chance to avoid criminal occupation."

Throughout much of the foregoing I have dealt more with the opinions, functions, and problems of the Attorney General than with the man himself, deliberately leaving to this point the extremely interesting statement that neither as a boy nor as a youth did he aspire to the practice of law, notwithstanding that his father, Judge William Mitchell, was an outstanding lawyer of the West during the formative period of his state's jurisprudence. Judge Mitchell served as county attorney and as member of the Minnesota legislature; he sat on the state district bench for seven years and for twenty years on the state Supreme Court bench, rendering opinions that are used to this day in the case books of the principal law schools of the country.

But the subject of this article, at the age of fourteen, when he left the backwoods Minnesota town of Winona, where he was born, to attend the Lawrenceville, N. J., preparatory school, was not thinking of the practice of law. Rather he was captivated by the magic of that day and this—electricity. Foreseeing the great future that developments since then have fulfilled, he prepared for a technical career, completing his preliminary education in 1891 and entering the Sheffield Scientific School. Specializing in electrical engineering, he finished the junior year before he came to a full realization that, although mechanically inclined, he had no enduring liking or taste for electrical engineering.

From Engineering to the Law

He gravitated from science to the law almost unknowingly and without any urging by his distinguished parent. While spending his vacations with his father, he had listened to the conversations of attorneys, judges, and justices who gathered for pleasure and business. Their arguments and discussions, as much as anything else, made him conclude that he would like to practice law himself. So he left Sheffield and entered the University of Minnesota, taking the day academic course and the night law course, receiving his academic degree in 1895 and his LL.B. in 1896.

During the years he was receiving his education, his father had moved from Winona to St. Paul, where, upon his graduation, the son became a clerk in the office of Stringer & Seymour, starting the career that has carried him to the heights of his profession. The

young man remained with that firm until 1898, when, upon the outbreak of the Spanish American War, he took a commission as second lieutenant in the volunteer infantry. During the period of hostilities he served in the line, as a brigade aide, as an engineer officer, and as an acting judge advocate.

Upon being mustered out of the service, he returned to the same law office in St. Paul. There he remained for a year, then went into practice with his father. Judge Mitchell, although a Democrat in a state dominantly Republican, had been elected to the bench year after year, the Democratic conventions nominating him and the Republican conventions indorsing him. His eventual retirement came when a prominent Republican sought and secured that party's nomination to the Supreme Court. Left with official Democratic backing only, in a state where the Democratic party always has been a struggling minority, Judge Mitchell waged a valiant contest but went down to defeat by a few thousand votes.

Building Up a Practice

In consequence, father and son opened a law office of their own. Judge Mitchell died a year later. The present Attorney General then became the junior partner of Palmer, Beek & Mitchell at the age of twenty-six years. Changes came with startling rapidity. Mr. Palmer shortly became president of the Minnesota Mutual Life Company, and Mr. Beek entered commerce work, leaving Mr. Mitchell with a considerable law practice which he had not got together himself. He believed it desirable to make a connection with an older firm, so became the junior member of How, Taylor & Mitchell, which in the course of time became Butler & Mitchell. The firm had developed as large a law business as any west of Chicago when his partner, Pierce Butler, was appointed associate justice of the Supreme Court.

Throughout these years the Attorney General tried many cases in court, obtaining drilling and training that is invaluable to him to-day. At no time did he hold public office. There were occasions when he aspired to the office of corporation counsel and to a seat on the state bench, but such opportunities came after the time had passed when he felt they would be of advantage to him.

This may be as good an opportunity as any to say that he resents the intimations that he changed his political affiliations to obtain the high Federal offices latterly tendered him. Most emphatically, he is not a turncoat politically. He is as much the "old line" Democrat to day as he has been through life, and as his father was before him. He has voted occasionally for Republicans, but because they came more nearly to representing his views than the Democratic candidates happened to. Moreover, former President Coolidge knew he was a Democrat when he tendered the position of Solicitor General, just as President Hoover knew he was a Democrat when he offered the appointment of Attorney General.

The proffer of the Federal position prized most highly by practicing attorneys, that of Solicitor General, came in a curious manner. In the years which followed the World War he began to feel that a change from private practice would be beneficial to him. He was fearful that he would get into a rut. At about that time a vacancy occurred in the office of United States circuit judge for the eighth circuit. An influential friend in Washington asked him if he would care to have his name considered. In reply to his friend, Colonel Mitchell expressed his appreciation but added that the only Federal post in which he would be interested was that of Solicitor General. He had no thought that the position would ever be tendered to him; rather he was merely being truthful.

© UNDERWOOD & UNDERWOOD

Mrs. William D. Mitchell.

A Democrat in the Cabinet

Not so long after he declined the judgeship James M. Beck resigned as Solicitor General. His Washington friend, recalling their correspondence, presented his name to President Coolidge. Although many Republicans aspired to the place, the President tendered it to Colonel Mitchell, believing him the man best qualified to do the work.

His thought when he assumed the solicitor generalship was that he would hold the office for two years, but, becoming interested in the work, he decided when that period expired that he would hold the office for another year. In 1928, however, he advised Attorney General Sargent that it was about time for him to resign.

The Attorney General argued against his retirement, emphasizing the success he had achieved and pleading that he did not want to have to seek another Solicitor General when he would be retiring himself within eight months. Consequently Colonel Mitchell consented to remain in office until the Coolidge Administration came to an end.

(*Continued on Page 100*)

WHAT MANNER OF MAN WAS CLEMENCEAU?

By STEPHEN BONSAL

Lieutenant Colonel attached to the American delegation to the Peace Conference; Clemenceau's personal conductor during the Tiger's postwar American tour.

THE VISIT to this country, in the late fall of 1922, of the former prime minister of France came as the culmination of many conversations and much correspondence between him and Colonel House. They had worked happily if not always harmoniously together throughout the war years and the no less troubled months of the Peace Conference; and when Clemenceau wrote that owing to the financial situation and the want of political security, at home as well as abroad, his beloved France was headed straight for ruin, House advised him to come and place what he thought were the facts of the complicated situation before the American people, as only he could do it.

Clemenceau came, and what happened is well known. But it is not so well known, if it is known at all, that this was but half the plan; the sequel was to be a meeting between Clemenceau and Hindenburg, his great antagonist, in which an appeal for peace was to be made to the radicals and the Democrats of Germany, as the initial move of a crusade in favor of political and physical disarmament.

Precedent for this move was to found in the alleged meeting in 1878 between Gambetta and Bismarck, about which so much has been written and so little is known. Even if this meeting never took place, as most historians assert, the rumor resulted in improved relations between the two countries, then so near the brink of war. Colonel House knew that Clemenceau had great respect for the East Prussian, who had made war without shocking civilization; and he had reason to believe that Hindenburg held the Frenchman in high esteem. What might not result from a casual meeting, say on the neutral soil of Carlsbad or some other watering place, where two gentlemen might go without being suspected of political designs?

"Almost an American"

But the projected sequel to the American visit was never to become history. Three weeks after Clemenceau's arrival in this country Poincaré announced his plan to occupy the Ruhr until Germany was brought to a more conscientious observance of her treaty obligations; whereupon the opportune moment was lost, and it never came again. In private conversation with me afterward, however, the Tiger of France let his imagination have full swing as to what would have happened had Colonel House been able to bring about the meeting and, telling them to put all their cards on the table, locked the Frenchman and the Prussian in some secluded room!

In his formal speeches in their country and in his private talks with our representative men the Father of Victory unburdened himself of what he considered to be home truths. They were unpalatable to many, but they were spoken with grace, sincerity, and disarming charm. His formula was something like this: "Of course, my friends, I could not talk like this if I did not consider myself a transplanted European just as you are. I beg of you to consider me an American citizen," he would say, "and in doing so you will be committing such a trivial illegality—one of those little ones which, as Lincoln said, count as nothing between friends! You see, I spent four years and four months in America when I was here before. I studied hard to prepare myself for the honors and the duties of American citizenship. Only eight more months to wait, and I should have had the same right as you have to speak your mind freely and loudly upon any subject under the sun. But that Napoleon was behaving so disgustingly I had to go home and help to kick him out. So bear with me, my friends, and listen to Georges Clemenceau, who came so near being an American citizen." After that, as one of the reporters remarked, he could get away with murder.

The Tiger's Would-be Assassin

But to revert to Peace Conference days: As Clemenceau was leaving his house in the Rue Franklin for conference at the Crillon with Earl Balfour and Colonel House—Mr. Wilson was in America at the time—a halfwit fired seven shots at him. Fortunately, only one took effect; but the bullet, which never was extracted, endangered his life for many weeks and caused him great pain throughout the ten years he was yet to live. Notwithstanding, Clemenceau refused to allow the incident to be dignified as an attempt at assassination, and when he spoke of it, which was seldom, it was as an "accident."

After the preliminary hearings in the case were over the prosecutor called upon the Tiger while he was still in the hospital, bringing with him several of the judges. They assured him that all the facts had been brought to light; that the man had no accomplices of any kind but that he was unbalanced and a menace to the community. And they asked what Monsieur Clemenceau thought the sentence should be.

"How complicated your duties are!" exclaimed the Tiger. "Of course I'll help you all I can, but I'm glad I am not a judge. When I think of the men who are continually sniping at me from behind and from ambush I am tempted to conclude that this brave fellow, who faced my walking stick with nothing in the way of weapon save a machine-gun revolver, should have conferred upon him some prize of valor, some Grand Cross or other. But I must not be impulsive—the women and children and the innocent bystanders, who might have been hurt while the

fellow was aiming at my miserable old carcass, are to be considered. Still, there is his poor marksmanship to take into account. We have just won the most terrible war in history, yet here is a Frenchman who at point-blank range misses his target six times out of seven! Of course the fellow must be punished for the careless use of a dangerous weapon and for poor marksmanship. He ought to be locked up for about eight years—with intensive training in a shooting gallery." The legal gentlemen withdrew in some consternation; the halfwit got a ten-year sentence.

While the French premier was still in the hospital I was frequently sent by Colonel House—the ranking member, in the absence of Mr. Wilson, of the American Peace Commission—to lay before him the developments of the day and to receive any statement he might care to make to his fellow negotiators.

Midnight Talks

Of course he had turned the hospital topsy-turvy with his eccentricities. To the complaining sisters who nursed him with such devotion he had an answer that turned away wrath: "Before I was only a chartered libertine and had to knuckle under; now I'm a martyr, and you must put up with me."

One of his old habits was to sleep from nine in the evening until midnight. Then, bright as a button, he was ready for business, and his sick room was thronged.

"I must make a peace," said Clemenceau to me in one of these midnight sessions, "based upon my belief as to what is proper and upon my own experience of the world in which we have to live. My responsibility is personal and nontransferable. When called to the bar of history I cannot say, 'Well, I made these arrangements to conform to Mr. Wilson's viewpoint.' Mr. Wilson has lived in a world that has been fairly safe for Democracy; I have lived in a world where it was good form to shoot a Democrat. After a few weeks of sparring I became convinced that Wilson wanted the same thing that I did, although we were very far apart as to the ways and means by which we could arrive at the desired end.

"When he first developed his program it seemed to me perfectly utopian. I said to him, 'Mr. Wilson, if I accepted what you propose for the security of France, after the millions who have died and the millions that have suffered, I believe and I hope that my successor in office would take me by the nape of the neck and have me shot at daylight before the Donjon of Vincennes.' Then we began to get together.

"Once I said to him, 'Mr. Wilson, have you ever seen an elephant cross a swinging bamboo bridge?' Mr. Wilson said he had not. 'Well, I'll tell you how he goes about it. First he trots down into the stream to see if the foundations are all right. Then he comes back and puts one foot on the bridge. If the result is satisfactory he ventures its mate. Then he gives the bridge a jolt. If it stands that, he trusts it. Now that's my idea about your bridge leading to the New Jerusalem. I may be a springing tiger where my personal fortunes are concerned; but when France is at stake—well, there never was an elephant more careful and cautious than I am going to be.'"

In 1924, aroused by a more than usually fantastic tale as to the Paris peace negotiations, by one who was there yet who remained completely ignorant of what actually took place, Clemenceau said (and I took down his statement a few minutes later): "All this is mere literature—and tawdry literature at that. Wilson never hoodwinked me, I never bamboozled Wilson. I thought he had lived in a cloistered world disturbed only by academic and theological disputes. He was always asking me about the days of the cave dwellers and about how the Trojans and the horse-loving Greeks had fought out their battles on the windy plains of Troy. He was quite sure that I was there, and he wanted to supplement Homer with what I could recall of those epic times. But one day we had had, as usual, a terrible row; though it was all out in the open. I thought I saw a light, and I said to him, 'Mr. President, your League is a move in the right direction, no doubt—it may usher in the new era, and twenty years from now it may suffice. But it does not afford enough protection for France today. For the transition period I must have something stronger, an agreement with teeth in it, signed by the great powers who have been through the furnace of war.' So we hit upon the Tripartite Rhine Agreement, making the defense of our eastern frontier a concern and indeed an obligation of America and England.

HENRI MANUEL

The cap worn by the Tiger in this picture was given him by an admiring poilu during one of his visits to the trenches. He often wore it, and it was finally buried with its owner.

"The tragedy, of course, was that this agreement was never ratified, and we had to seek security in other ways. Naturally I knew all about the procedure of ratification in your country, but I'm bound to say that Wilson mentioned the opposition that was developing not merely once but several times. And I told him that we were in the same boat—that there would be opposition to the treaty in the French Chambers; and there was. I overcame it, however, whereas Wilson was not so fortunate."

"The Great Known Soldier"

When I recall, as I am about to do in a fragmentary form, incidents of the last meeting, in America in 1922, between the two great war leaders, I am quite convinced that the tie between the Covenanter and the Jacobin from the Vendée was the strongest friendship that emerged from the Peace Conference intact. Clemenceau was shocked at the physical changes in the appearance of the man who had so recently dominated the world. His cheeks were wet

with tears when he came downstairs, and he refused to dine out that evening. "I have just seen the great Known Soldier of the war," he said, "and I want to be alone."

I had not seen Mr. Wilson since the Conference; but on learning that I was there he sent for me and said, "What a glorious fellow Clemenceau is! I envy you the privilege of seeing so much of him. We had our battles, but he always fought out in the open, he never took to cover. How I love the stories he tells about me! He says there are only one or two that he did not tell me first, and I believe him."

Breakfast With the Brakeman

Our illustrious visitor was not very punctilious in his relations with the great. "If they are intelligent," he used to say, "they will understand the breathless circumstances of the tour I am making and will pardon. If they are not intelligent, no matter." But in his relations with the humble and subordinate he was most thoughtful. "Do not give me praise for that," he said. "I like them. They interest me."

One of the gentleman who traveled with him, representing something or other, formally complained of the fact that in the helter-skelter he more often than not had to take his meals with people who, in his judgment, did not belong to his social category. Not so with Clemenceau. It was his daily ambition to have the brakemen in with him at breakfast, at the crack of dawn.

This ambition was not frequently realized, for the brakemen were busy people. But they liked the Tiger, and one of them gave the war premier of France a phrase which stuck in his memory and which he loved to repeat. "I take it," said the brakeman, "that there is a difference between the old world and the new. Here, you know, every man who works is a gentleman. The others—well, not all, but most of them—are bums. Is it different in the old world?" "Very different," muttered the Tiger.

As we were leaving Chicago after his second visit (the one in which he addressed the farmers as dirt farmer to dirt farmer) he told me he wanted to reach New York from three to four hours ahead of schedule. "It is most important. Can it be done?" I answered, "The railroad officials can do almost anything. We shall see." And so telegrams were sent urging greater speed and demanding the right of way. All through the night we rushed along, more often in the air than on the rails, it seemed; and all through the night we saw fast expresses sulking at switches and freight trains grumbling at the sidings. "Isn't it glorious!" exulted the Tiger. Sleep? Not for him—he would not miss a moment of the thrilling trip.

A Trip to the Bronx Zoo

Morning came, and shortly after breakfast we were bounding over the Hackensack Meadows, three hours and a little more ahead of schedule. Suddenly I bethought me of my duty. "The cars will be there, of course; but where does this important matter take us?"

The Tiger hauled me out into the corridor—this communication was for my ears alone. Then, actually blushing, he said: "We have been working so hard. I think we ought to have a little fun. Perhaps man is the noblest specimen of the animal kingdom, but after seeing always men I like to change." It was my turn to blush now. But the Tiger continued in a whisper: "You see, I read in the paper yesterday that a pygmy elephant had arrived at the Bronx Zoo from Darkest Africa. In all my big and little game shooting I have never come across a pygmy elephant—and you see, don't you, how important it is for me to get there and have a look at him?"

We wandered around in the Zoo for hours. The Tiger pulled the pygmy elephant's ears. He fed him with peanuts. He was photographed stroking the animal's trunk, and then he slipped away. We drove downtown unattended for the first time in three weeks to what was once the French Quarter of New York, bounded by Fourteenth and Bleeker Streets and by Broadway and the North River, where he had lived in the early 1860's. It was snowing and sleeting and the footing was treacherous, but he would not have his footsteps dogged, so our car was parked in University Place as he began the search for the houses in which he had lived during the years of exile which the Little Napoleon had decreed.

In the Old French Quarter

He found the house in which he had lodged for most of the time; a brownstone English basement house, about three doors from Sixth Avenue on the north side of Eighth Street, it was but little changed. As to the office where he had received a few patients, he was rather vague and but little interested, and so it may well have been on West Twelfth Street, where the local historians have placed it. Then I showed him the house, also on Eighth Street, where Louis Napoleon, afterward Napoleon III, had lived during one of the years of his exile. At least I am sure I found the house where the dear old French lady lived who had rented him rooms and from whom we used to gather all manner of interesting details as to his ways and means and conspiracies for the Sunday papers of my day.

The Tiger was immensely impressed at the coincidence. In this narrow, undistinguished street had plotted and planned the man who achieved an imperial throne and disappeared at Sedan—and twenty years later the man he had exiled after a prison sentence comes along, lodges practically next door, and develops that courage and tenacity which smashed the Hindenburg line!

The coincidence staggered him. "How strange, how strange!" he muttered; and then I lost him. The friends who had walked with him along these slippery streets sixty years before now came and took him away from me. He was talking to ears that had long ceased to hear and listening to voices which had long been stilled. By the time I got him back to the car he had a chill and his lips were blue.

When we reached the house of Bernard M. Baruch everybody in the world was there to see him, but we pushed him into the elevator and soon had him lying in bed—fully dressed, however, with a martial cloak around him which, as he said, covered a multitude of sins and at least two hot-water bottles. Soon he began to joke, trying to soften Albert, his trusty valet

and friend, who looked at us both sternly. "Albert, you will have to revise my epitaph. You will have to say, 'He survived the German drive, to be killed by a pygmy elephant." But Albert was not to be mollified.

Suddenly the schedule of the evening was recalled, and I was asked to inform two charming ladies that Monsieur Clemenceau would not be able to appear at the great banquet they were giving for him that evening.

Such a moan as came back over the wire, I have never since heard in this vale of tears. Then they came and crouched at his bedside. "*Mes enfants*, it is sad, but it is true—the Tiger has been overthrown by a pygmy elephant. I cannot come to the banquet to-night. You will be lucky if I get on board the French boat at midnight—it would be so unfair to burden you with my funeral arrangements. But you must mail me copies of the speeches."

Only the Recording Angel can say whether these two charming ladies who crouched at the Tiger's feet were without guile, but it is certain that in this emergency they showed the wisdom of the serpent. "Do not think of the banquet, dear Monsieur Clemenceau. A thousand women will be disappointed, heartbroken, of course, but then they will be comforted to know that at least you are taking care of your precious life." Then one of them said, in a voice which, though low, did not escape the Tiger, "I would rather jump off the Woolworth Tower than face that dear lady who is coming from Honolulu to see him"; and the other replied, "Or that dear little woman who is coming from Valparaiso—coming second class, so that she can contribute to the Children's Fund more liberally."

Farewell!

Clemenceau was in deep thought now, and at last he said, "I would go if Albert here had not said my lips were blue." Then the charming ladies jumped on Albert. "How can you say anything so absurd? His lips are a rosy red, like a baby's." All Albert could stutter was, "Monsieur has not been reasonable to-day."

"How true that is, Albert," put in Clemenceau. "How often that has been true. How often that will be true. . . . Now I am going to the banquet." He went. He was the life of the party. He patted the lady from Honolulu on her cheek, he chucked the lady from Valparaiso under her dimpled chin. Two hours later he was on the S. S. Paris, asleep under the flag that he had done so much to keep proudly flying.

General Pershing, Marshal Foch, and the Premier, here in an amicable frame of mind, often disagreed violently over the conduct of the war, especially with regard to the part American troops were to play in the early days of 1918.

It has often been stated that Clemenceau was skeptical of the good faith of the German Republicans and that he thought all the Weimar business, the Assembly and the Constitution, was but continued war camouflage. Small blame to him if he did think so, for probably a majority of the people of Germany had the same thought. Even Walther Rathenau, who sealed his devotion to the Republic a few months later with the sacrifice of his life, told me in Berlin in September, 1919, that the chances that the republic would survive were slender indeed.

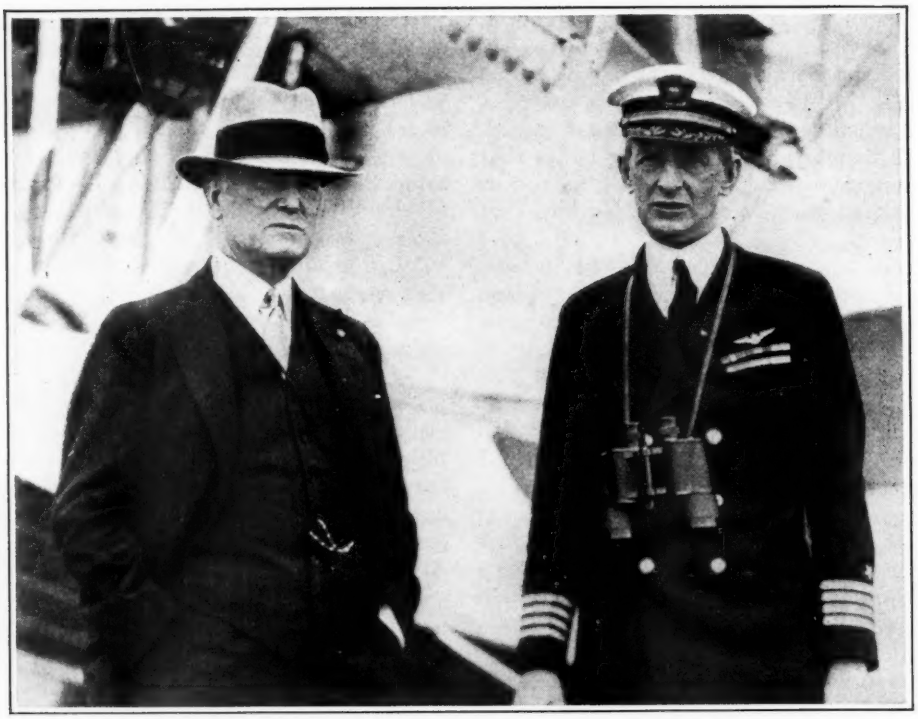
The Security of France

But as the republic gave proof of sincerity and its leaders showed a willingness to conform as far as possible to Treaty obligations, Clemenceau said more than once that Briand was right in assisting Stresemann to such modifications as would stabilize his government and help him along his thorny path. Always, of course, there was the proviso that these concessions should not weaken the security of France. And more than once these helpful words of the war premier were translated into votes which saved the day.

It cannot be denied with too great an emphasis that Clemenceau was not always harping on the string of hate. Of course he could not forget the burning of Saint Cloud, which he witnessed, or the words with which Jules Favre told him of the cruel contempt with which he had been treated by the men of blood and iron with whom he had to make peace. Nor could he forget the rape of Alsace and Lorraine. But these memories were fading, and he recognized that a new world, different but not entirely different, was born.

"I have liked many Germans immensely," he said when I last saw him, "but they were like dough in the hands of their emperor-kings. Now they are learning what are the rights of man—learning in sorrow and in suffering, in the Valley of Death. If this course is pursued without interruption for fifty years I do not despair. There may then be peace along the Rhine and in the foothills of the Vosges, and the Germans and the French may yet sit side by side and work in friendly competition in a disarmed world. But we must not rush things. We must go slow. There is a streak of light in the east, but it may be—though I think not—a false dawn. We must go slow."

(*Continued on Page 110*)



Two of the Navy's high command discuss our latest weapon of defense, the air fleet. Rear Admiral William A. Moffett, chief of the Bureau of Aeronautics, and Captain Frederick Horne, commander of the world's greatest fighting unit, the aircraft carrier Saratoga, on board the latter's ship.

WASP NESTS OF OUR NAVY

By LIEUT.-COMMANDER L. C. STEVENS, U. S. N.

THE WARDROOM of most warships is snug and sociable, like the lounging room of a congenial club. After meals, when off duty, and in the evenings, the ship's officers talk shop or play bridge. They discuss the rapid development of modern tactics and damn the pay bill. There is no privacy in the wardroom. If one has guests, they are more or less the guests of the ship. The wardrooms of the Saratoga and the Lexington are more like the dining room or lobby of a large hotel. The number of airplanes carried on board is so large that the aviators alone make up a bigger wardroom mess than exists on any other type of ship, and in addition to the aviators are the ship's officers necessary to handle the largest and most powerful warships afloat in any navy. Guests can be cared for at half a dozen different dinner parties without interference, and the size of the ships is so great that one has to look twice to recognize an acquaintance across the messroom.

On a long southern cruise ship's eggs are apt to become a bit tiresome for breakfast; but there is always compensation, when just out of Panama, in a fresh supply and in fresh cream and papaya. During maneuvers meals are to be had when one can get them, and breakfast in particular is apt to come after what already seems a good day's work. In between fleet problems, however, flying after breakfast is routine. By the time the mess tables are cleared the *bong . . . bong . . . bong . . . bong* of the general alarm sounds measured and insistent throughout the ship. A strident voice announces flight quarters—"boots and saddles"—in every compartment through instruments like radio loud-speakers. Officers hurry to their rooms for their flight gear and parachutes and soon come pouring up to the flight deck. Up the ladders from the gun galleries and out from the off-center steel superstructure known as the "island" rush streams of men.

There are in reality several islands rising high above the flight deck, set far over to the starboard side of the ship so that there may be as much uninterrupted breadth of flight deck as possible. The aftermost structure consists of the funnels for carrying away the tremendous volume of hot gases coming from the boilers. Enough oil is burned in them to generate a 180,000 horsepower in the main engines in addition to supplying all the energy necessary for heat, light, and auxiliary power to operate all the complex parts that go to make up the organism of a carrier. The uptakes are flattened, again to

¶ This article takes you aboard a Navy aircraft carrier, to maneuver with the High Hats, the Krazy Kats, the Flying Turtles. You meet the picturesque "hot papa" and sense the pride that comes from being attached to one of the world's latest and greatest fighting units.

increase the beam, and are joined together by a single external casing so that it appears as though there were but a single stack. Forward of the stack is another structure that contains the bridge, from which the ship is controlled, with its radio rooms, aerological offices, fire-control devices, and space for all the functions that require a clear and uninterrupted view of the surrounding sea. Forward and aft are the gun turrets.

Ready for the Take-off

High up on the island the roll of the ship is exaggerated, and in a heavy swell the bridge swings through a large arc. Since the best view of the entire deck can be had from an elevated position, the officers in general supervision of flight activities are stationed on the island. Planes are taken off and landed with the carrier steaming dead into the wind, in order that there may be no side drift when the planes are air-borne. As the ship swings into the wind, the wake trails off into a graceful curve, clear and well-marked as the tracks of an automobile on a wet but untraveled road. Close astern the ships detailed as plane guards follow the same smooth path. Nothing but a light cruiser or a destroyer is fast enough to act as plane guard for the Saratoga and the Lexington, and since a destroyer will do just as well it gets the job.

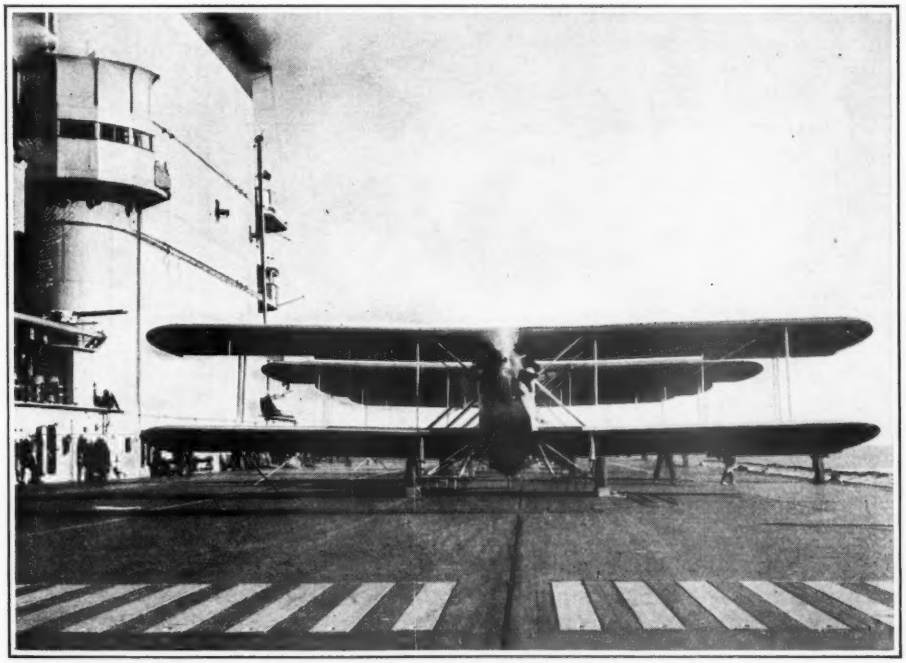
The "hot papa." A sailor in a heavy asbestos suit is always ready to fight any fire. In the tropics the men find the suit peculiarly well named.

Being fast and maneuverable, it is the task of the plane guards to dash to the assistance of any land plane that may go down on the sea while away from the carrier. Most of the planes operated on the high seas from our carriers are land planes, for they have the highest performance in the air. Seaplanes are occasionally used as substitute or additional plane guards, and boats on the carriers themselves are kept ready for instant lowering, swung on their davits in the marsupial pouches along the sides so that they will be below the level of the flight deck and yet not project beyond the extreme breadth of the hull. If anything were permitted to extend beyond the sides of the Saratoga and the Lexington, the Panama Canal would have to be enlarged to permit them to pass through.

Packed Nose to Tail

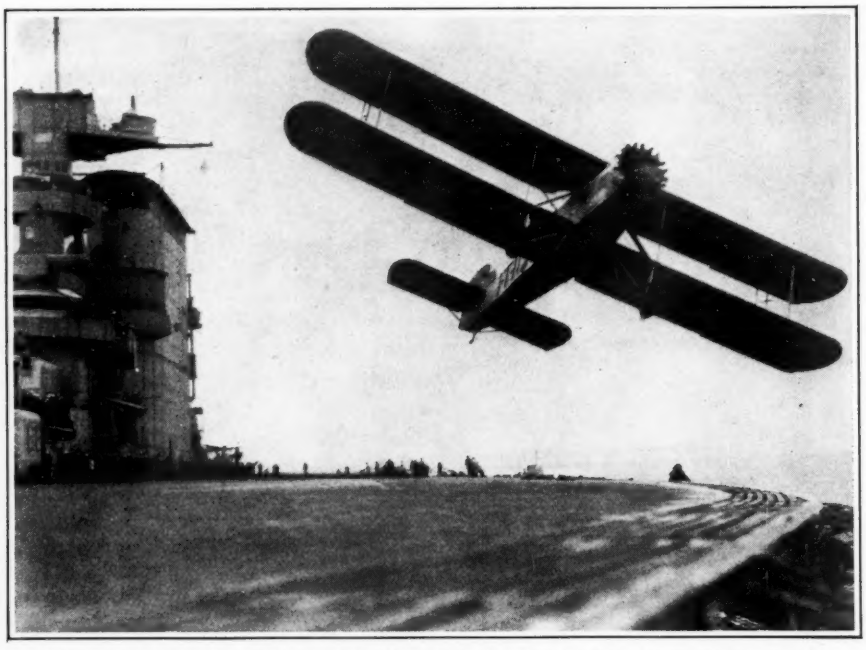
On the flight deck, airplanes are packed nose to tail, with wings overlapping to fill every foot of space. Those that are left on deck through the night are protected from the wind by "palisades" or windbreaks; these rows of metal planks that break a sweeping head wind into harmless eddies cross the deck and can be folded down out of the way. Cross winds are similarly destroyed by sections of webbing that, when flight quarters are sounded, are dropped down below the level of the deck and form extensions to the life nets that provide a place of refuge when the planes are in motion.

Cockpit covers are unlashed, propeller covers removed and stowed clear. The pilots and observers, parachutes swinging awkwardly behind, climb into the planes. The senior flight officer, from high up on



© THOMPSON

The deck of the Lexington. Most Lexington and Saratoga planes are equipped to alight only on land. The necessity for a high degree of maneuverability in the air demands this. Each ship cost about $40,000,000, and they give more defensive power per dollar than any of our other fighting vessels. Probably whatever new carriers we build will be considerably smaller than these two.



The last torpedo plane flashes off the deck of the Saratoga to join the squadrons already in the air. The torpedo planes and the bombers are the last to take off and the first to land, for they require the longest run before they are able to get safely into the air and so must have clear almost the entire length of the great deck.

the island, casts an experienced eye over the deck to see that all the planes are manned and that there is not one man too many on deck. That solid mass of fuselages and surfaces is no place for untrained personnel when the propellers begin to whirl, for the slipstreams are enough to take a man off his feet.

Deafening Roar of the Engines

When sure that all is ready the senior flight officer gives the word, and the low grinding of the inertia engine starters begins its crescendo. Suddenly an engine sputters, and by the time it has come to life it is joined by a dozen others. By the time the foremost squadron has warmed up the next squadron breaks forth, and soon there is an exciting roar that has no parallel on any flying field in the world. It paralyzes, deafens, and sets the nerves on edge in a thrill that rises and falls with the noise of the engines.

It is doubtful if one can ever grow completely hardened to this reverberating roar. Certainly long before the thrill has ceased, a plane in the foremost row is turned loose. Its tail goes up as it sweeps gracefully down the deck, suddenly to climb dizzily in the air as it leaves the bow. Another follows it—another and another—and they gather in the air in precise, birdlike formations so smoothly and swiftly that it is hard to realize that a moment ago they were in a compact mass on deck. Plane after plane sweeps by, and as they climb they take particular care to keep clear of the unseen slipstreams of the planes that have preceded them. To be caught in a slipstream is to experience a giant hand seizing one's plane and forcing it ruthlessly down, regardless of every effort to control it. If this happens near the water, it may become a source of great danger. Last of all, the yellow and silver wings of the heavy bombers come thundering past, swerving clear of the island, to join their squadrons in the blue distance.

The ship is suddenly strangely silent by contrast. The wind falls as the ship turns away from it, and there is a slight feeling of let-down, as if some great moment has just passed. The ghost of the roaring of the engines dies away in one's ears. Sailors clear away gear, and the ship goes quietly about its business of being a mere warship and not the nest of such a brood as just took the air. The alarm gongs clang monotonously again, calling the crew to gun drills. Soon the deck is clear, the heavy turrets slowly swing around, and the muzzles of the long guns lift themselves in the air without ever a man to be seen.

Within the island and below decks the routine day's work is on—the training of men to handle complicated and deadly mechanisms, in order that a leaven of skill may be available in time of real need, and the studying of those mechanisms in order that they may be improved and brought to perfection. In the fire rooms and engine rooms instruments are watched, levers thrown, and valves adjusted. In the airplane shops, lathes and milling machines smoothly fashion gobbets of steel into airplane parts, and the blue-green flashes of the metalsmiths' torches shape sheet-metal fittings in order that the planes may be kept in the air.

All the Saratoga's planes bear the insigne of the flying turtle.

With the exception of a protective patrol high overhead—a symmetrical pattern of black specks in the blue—the planes are far out of sight. In the radio rooms of the carriers, however, sailors talk with them continuously. With headsets over their ears they write mechanically, for the less attention they pay to what they write the better they can catch the twittering signals that stream in from the distant squadrons.

Eyes of the Fleet in Action

It is not enough for planes to be "eyes of the fleet"; they must also have tongues to tell what they see. The strength, disposition, course, and speed of the enemy are items of first importance, as they control the entire course of action of the fleet. The scouting squadrons are detailed to this work, but the carriers are also capable of carrying a powerful striking force in their own right. Fast high-performance fighters are out somewhere to sweep the air clear of enemy airplanes that seek our own fleet as an objective. The

fighters also clear the way for our light and heavy bombers and torpedo planes that seek the powerful capital ships of the enemy for their own especial prey.

And in the airplanes that strike directly at the enemy battleships is the unanswerable argument for a navy of surface ships as well as an air force. There is not an airplane that flies, capable of being used in war, that cannot make its blow harder or improve its military performance by basing on a surface ship—an airplane carrier—until it comes within a comparatively few miles of the enemy, rather than burdening itself down with sufficient fuel to fly a great distance before launching its attack. And fighting planes with a small load of gas can always shoot down planes that are designed for flying great distances.

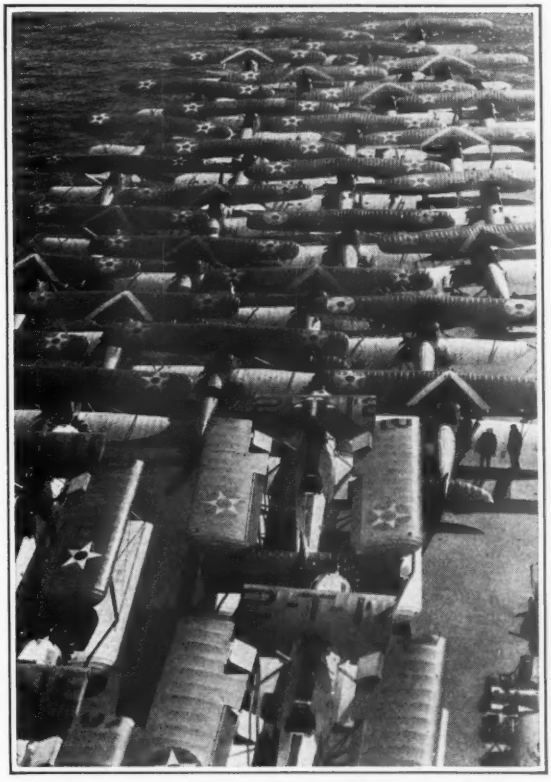
"Water, Water, Everywhere"

The difficulty of finding a ship or other object at sea from an airplane is far underrated. Under conditions of only fair atmospheric clearness there are hundreds of square miles of empty ocean spread at one time beneath the eyes of the pilots, and, at the cruising speed of service airplanes, great distances can be covered in a short time. The very fact that the field of vision is so large means that isolated objects necessarily appear very small, and, particularly when the air is filled with haze, a search for a single ship that is not leaving a trail of smoke—and war ships make it their business to steam smokeless—is oftentimes uncomfortably like looking for a needle in a haystack. A fleet or squadron of capital ships is fairly easy to find if one knows approximately where to look, but time after time submarines running on the surface have reported seeing airplanes overhead when the airplanes have completely failed to see the submarines that were the objects of their search.

When John Rodger's PN-9 went down in the first attempt to fly from California to Hawaii, the position of the airplane was known within considerably less than a hundred miles. For nine days, under conditions of good visibility broken only by occasional scattered showers, the carrier Langley kept searching airplanes in the air from dawn till dusk without a moment's break, combing thousands of miles of ocean without success. Dozens of airplanes were also sent far out to sea from Hawaii on continuous patrol. During this time, the crew of the PN-9 saw searching airplanes but were never seen themselves. When one is running short of gas it is a lonely feeling not to see the tiny carrier deck below.

Particularly when a carrier is operating independently, it is not always an easy matter for the planes to find their way back unless assisted to the utmost by every device known to radio. The problem is complicated by the fact that the carrier itself covers considerable distances during the time the planes have been out. At top speed, the Lexington and the Saratoga can make nearly forty miles an hour through the water. Although they weigh as much as forty thousand automobiles, the area of one of their decks would be lost in Mitchel Field. The deck space from which four eighteen-plane squadrons of airplanes are normally operated is less than a hundredth of the area of the average commercial flying field ashore.

The high speed of these two carriers makes them unique. They are not only the largest warships afloat, but they have enough speed to outmaneuver and to avoid engagement with any other warship in the world that they cannot sink by superior gunfire. Although their airplanes are their principal protection, this item of speed is not to be disregarded, as circumstances might arise when for one reason or another the airplanes could not be brought into play.



It requires long practice to operate planes in such close quarters, and the deck is no place for an amateur when propellers begin to whirl. The roar from the many motors has no parallel on any flying field.

The island is the symbol of speed; it exists mainly to take care of the stack gases, which are necessary by-products of driving such a mass faster than the speed limits for automobiles on most country roads.

New Types

The carriers now being designed by the Navy, one of which has been authorized and financially provided for, although much lighter, are nearly as large in physical dimensions as the Lexington and the Saratoga. Their speed will be only a little less than thirty-five miles an hour, and there will be warships with heavier guns that can outstrip them. This decrease in speed, however, makes it possible to eliminate the islands on the new designs and, by giving full development to aviation characteristics, to carry on considerably less than half the tonnage nearly the same number of airplanes as the island type of carriers can handle. Both the island type and the new flush-deck type of carrier have their own peculiar merits, and the American Navy has wisely decided that it can ill afford to do without either.

Size is a necessary requisite for island-type carriers, for the beam of the flight deck abreast the island should be as much as possible in order to give the aviator every chance to avoid a collision.

Breaking the World's Record

On her first passage from the United States to Hawaii, the Lexington broke several world's records for speed. A commemorative plaque was placed on the side of the island, where it could be read from the flight deck. Although the usual tendency of pilots is to avoid the island, a pilot came on board who seemed to be attracted to the island. He charged directly for the bronze plaque, and just before his propeller bored a hole in the stack one of the Lexington's sailors groaned, "Ye gods, he's going to break the world's record!"

Because of the large quantities of gasoline in all the fuel tanks of the airplanes, a fire on board a carrier is much to be dreaded. Every precaution is taken against such an occurrence, and from this grows one of the specific discomforts of carrier duty, for smoking is forbidden at flight quarters. There is always the possibility of fire in case of a crash. For this eventuality, a sailor in an asbestos suit is kept always ready to leap into the conflagration and rescue the occupants. His asbestos pants end in feet like a small boy's pajamas, and he wears heavy gloves of the same material. An asbestos hood gives him a resemblance to a member of the Klan. He is known as the "hot papa," and warm days in the tropics give him full right to the title.

Colonel Lindbergh takes the controls of one of the Krazy Kat planes of the Saratoga. This is one of the most cherished of the Navy's insignia.

It is not always easy to make a good landing on board a carrier, for until one crosses the stern the ship appears to be exactly the size and shape of a special-delivery stamp. The small size of the deck, in comparison with the available landing area of fields ashore, makes it imperative that one's flying be extremely accurate. The need for continual training and experience is obvious. You can almost tell a carrier pilot by his elongated neck.

Unless some other planes have been out so long as to be short of gas, the first squadron to come on board is usually a fighting squadron. The fighters need only a short deck run to take off, and, if landed first, can be stowed all the way forward, ready for the take-off the next time boots and saddles is sounded. There is keen rivalry between the squadrons, particularly between squadrons attached to different carriers, and it is no little distinction to be a pilot in certain organizations. The fighting squadrons believe that they are the pick of the Navy's aviators, and the torpedo squadrons believe just as firmly that the fighters are no more gifted than anyone else. Gunnery scores are kept on a competitive basis, and the Navy "E" on all the planes of the squadron that stands highest for the year is as apt to be in one type of squadron as another.

The extreme maneuverability and performance of fighting planes and the tactics that have been developed to utilize these characteristics to the full tend, however, to the attainment of a high degree of skill and precision in flying. Many inland cities realized this when Squadron VF-1, the Saratoga "High Hats," flew from San Diego to the National Air Races at Cleveland. As part of their routine training, the High Hats were accustomed to acrobatics of all sorts in close formation. They brought the stands to their feet when they took off, flew, and landed with short ropes tying the planes of each section together. A shiny silk hat painted on each airplane and on each pilot's leather jacket, the brilliantly colored tail surfaces of the planes, and the scarlet helmets and neckcloths of the flyers are normal outgrowths of pride in their organization.

High Morale

Col. Lindbergh and the Navy know each other well, as he has been to sea on the Saratoga and flown from its deck. At Cleveland, Lindbergh joined the High Hats and led a section in a spectacular exhibition of formation acrobatics.

When on the Saratoga, Lindbergh was temporarily one of the Krazy Kats, who fly the light bombers of VB-2. The spontaneous development of squadron insignia of this sort is a sure indication of a high state of morale. There are the Red Rippers, with a lurid streak of lightning on their coat of arms, the Red Dragons, snorting and rampant, and the Indian Scouts, who fly the "Aimees." The Aimees derive their name from the fact that they are amphibians, capable of operating on the water as well as on shore or on a carrier deck, and can take off in the ocean and land in the desert. The squadron of enlisted men on the Langley have the chevrons and rating mark of an enlisted pilot on their airplanes, and the ship's planes of the Lexington have a minute man. On the last southern cruise the Saratoga crossed the equator near the Galápagos Islands, famed for their giant tortoises; so to tell the world that they are real shellbacks, every Saratoga plane carries a small flying turtle.

Just as essential as well-trained pilots is a well-trained and organized crew deck; for when airplanes

(*Continued on Page 118*)

The contrast in clothes worn by American and English schoolboys is of significance as an indication of the way the two countries look at education. Eton boys wear their top hats, collars, jackets, and striped trousers almost as a uniform. Here seven of them are off for an afternoon stroll. It is not exactly our schoolboy hiking regalia.

COLLEGE HERE AND ABROAD

By JOHN ERSKINE

Author of The Private Life of Helen of Troy, Galahad, Adam and Eve, Sincerity

WHEN we compare the education of youth in America and in Europe, we usually confine the discussion to the studies themselves or to the methods of teaching. Where we detect a fault or an omission we suggest a remedy, as though the educator in any country need only see what is desirable in order to carry it out. If we happen to believe that Latin and Greek are the best subjects for cultural training, we praise the curriculum of the European *Gymnasium* or Lycée—and advise that Latin and Greek be taught in our high schools also. Or if we believe in the studies which prepare directly for a vocation, we suggest that the European boy wastes much of his time on dead languages and would be infinitely better off if he were following the American program.

¶ Exactly how much should higher education contribute to material success, how much to "the good life"? Pointing out the fundamental conflict between university objectives in Europe and America, the writer, professor of education at Columbia, indicates the weaknesses inherent in our present system and suggests a remedy.

Even when we are making no comparisons with other countries, we too often consider education with reference only to its superficial program. Reform in education means usually only the invention of new courses or the rearrangement of old ones. We simplify the curriculum, or perhaps make it more complicated. We give up the lecture system and even the recitation and resort to general discussion. We invite the young to look at human life as a series of special cases, or as the illustration of some philosophy of behavior. But all these matters have to do with the ultimate developments of an educational system; they distract attention from the source within, from the social ideals out of which every educational system unconsciously grows.

The important truth is that the educational system in which the American boy finds himself is the product of an entirely different social system from the European, and, however the curriculum or the classroom methods might resemble each other, or differ, a gulf would still remain, a direct contradiction, between the ideals of education on one side of the Atlantic and the other.

In the first place, the object of European education is to preserve the social system; the object of American

education is to change it. Putting the matter in less violent contrast, one might say that the prevailing ideal in European education, in spite of many new influences, still is to supply the members of the different social categories with the culture proper to their class, and to keep them in that class. The fundamental object of American education, on the other hand, is to enable every citizen to rise above his class. Where he is now is no index at all of where he may be, if given the proper opportunity.

Exceptions to the Rule

These ideals, of course, overlap. In the United States a number of schools and universities try to minister to a definite social class, and usually model their course on the curriculum which a similar school would offer in Europe. In such cases the assumption—not characteristic of America—is made that certain people are predestined by the good fortune of their birth to assume certain responsibilities in government or in general society, and that the best education for them is one that provides them with the culture for such responsibility and the moral purpose to meet it. On the other side of the picture, it is quite true that in Europe many men pass, perhaps in increasing numbers, from one social class to another. But in general the American ideal of education is to enable us to better our condition. The ideal of European education is to enable men to live well in their condition.

The contrast can be put in some detail. The ideal of education in Europe may be described in some such terms as these: In the first place, as we have said, the assumption is that people will remain in the social classes in which they are born—the workman will remain a workman, and his sons after him, and his daughters will marry other workmen; the shopkeepers will hand on their occupation to their descendants; the most fortunate—that is, the people of endowed wealth, and the professions, will carry on from generation to generation as their parents before them.

But since the most fortunate have already reached their goal, have already gone as far as they can toward the top, they too require an education which implies no change. The quality of their education is therefore appreciative rather than active. It looks toward the past and toward the present as illustrating the past.

All for the Fortunate Few

Results are better than one would expect. The fact is that this education of the élite of Europe results in an appreciation of intelligence for its own sake, of the play of the mind, of wisdom and understanding. It is the most enviable result of European education that the well-trained and the most fortunate class have an understanding of history and human conduct, public and private, such as ought to be the privilege of every human mind. The defect, from the American point of view, is not only that this wisdom is limited to a fortunate few but that the fortunate few rarely intend to do anything with it.

Here again the exceptions can be named in large numbers. European citizens of the older families and of the most conservative training have proved themselves repeatedly masters in affairs and in politics, and leaders in the arts and sciences. Yet the statement in general is correct that their culture ends in ideas rather than in action. For this reason, though Europe repeatedly gives us stupendous discoveries in science, it is not in Europe primarily that those discoveries are developed or put into practical use. Pasteur conferred benefits on the race which any civilization must revere, yet even to-day in his own country it is not easy to procure Pasteurized milk for children, much as France has need of children and desires to care for all it has.

This European love of the status quo is itself a kind of culture which many Americans envy. Perhaps much more could be said for it than the present writer thinks of at the moment. Certainly a large number of American visitors to Europe agree with the inhabitants in deploring any change in the life of the peasant, any alteration of the picturesque cottages and villages, any improvement in sanitation, any change or any speeding up of the graceful but somewhat slow methods of tilling the soil. Leave the poor as they are, they say. They are happier unspoiled.

Though this argument is sincere with a number of Americans, and though it is deep-rooted in the social outlook of Europe, some of us are bound to feel that it is more blessed to hold the theory than to be the object of it. The charm of the doctrine is more obvious to the fortunate tourist than to the peasant.

Getting Ahead in the World

In America we start with the assumption that the greatest opportunities should be provided for everyone to go as far as his talents and his character permit. As far, that is, in any direction whatever. It needs no great imagination to see from this first assumption that our school and college programs must necessarily be complicated and hurried. At every stage of our educational system the student is busy choosing his future, or taking back his choice and beginning again in the light of a fuller knowledge of himself. In the second place, with us, those who have reached the top have no reason for believing they can hold their position, through custom or momentum. They may be displaced at any time by more energetic or more competent neighbors. The education, therefore, of our élite has in it also the assumption that a continued progress is essential. The emphasis is less on the past, even on the present, than on the future. Whatever courses are offered in our schools and colleges will be scrutinized from the point of view of their usefulness to this continued "getting on."

And in the third place, every discovery in science or any other field carries with it automatically an obligation to develop it and make it available for society at large. Nothing is more depressing to the American spirit than the possibility that science may give us more discoveries than we can put to practical use. That possibility has left Europe undisturbed for a long time. The effect of this feverish American desire to turn knowledge to use may or may not be admirable, according to one's philosophy; in school or college the attempt may be made to spread knowledge for which the students are utterly unprepared. Yet to withhold the knowledge is, in the American conscience, a sin, as though one were to

withhold any sort of kindness from one's fellow man on the ground that he is not prepared to appreciate it.

In one field the European has always been able to pass quickly from his own class into the more fortunate end of society. Since the Renaissance, proficiency in art has been the one traditional outlet, or way of escape, for the European who is born in modest circumstances. For that reason art has been pursued with a seriousness in Europe not matched as yet in the United States. The European concludes from this fact that a natural talent in the arts occurs more frequently on his side of the Atlantic Ocean than on ours.

Such claims are hard to decide by statistics, but there is no real reason to believe that artistic aptitude is much more plentiful in one part of the world than in another. The important fact is that in the old country this one kind of education has always opened a future. It has held out to the European the sort of prospect which all sorts of education try to hold out to the American. In the United States, therefore, there is no special inducement to become a painter, a musician, or a sculptor, rather than to become an engineer or a business man.

On the contrary, in the United States the arts have been largely studied with that conservative point of view—the desire to enjoy the past and to keep things as they are—which characterizes the general education of the upper classes in Europe. The American has largely looked upon the practice of the arts as a play of the mind or spirit for its own sake, with no relation to practical results. He has therefore tended to postpone such enjoyments until the practical basis of his life has been already cared for.

Cutting Loose From Tradition

Because of our history, because most of our population have come from those portions of European society to which the aristocratic education was denied, we have perhaps an instinctive distrust of the old training given to the élite. Because certain knowledge was satisfactory to the wealthy and the privileged in Europe, we argue too readily that it is unnecessary or would be harmful for us. We have been and still are, therefore, too quick to discard disciplines the value of which would be great for any human being.

Certain training, for example, in logic, vestiges of the old scholasticism which in Europe can be found deep-rooted among the well educated, we are eager to get rid of completely. Face to face with a European trained in this or some other sound method, we perhaps are embarrassed, but we cover our embarrassment or our sense of inferiority by indulging in a resentment against what we call useless traditions. Yet the fact that the European has not used his intellectual equipment for practical results is no reason at all for denying that his equipment is in itself admirable and enviable, or that it could be put to good use.

Those subjects which we in America agree should be taught to all sorts and conditions of men we have tried to adapt to the greatest possible utility. Our purpose has been commendable, but one unfortunate result is that we have evolved in our educational programs a complexity which is perhaps not justified by the benefits conferred, and certainly not conditioned by the nature of the subjects themselves. European education is to-day simpler than ours, and it preserves a clearer view of what is essential.

With us, for example, there is a natural desire to teach to all classes the language which we speak; we therefore devote much time in school and college to the teaching of English, at least as a written subject. Quite obviously, to speak English well is to speak it well; to write it well is to write it well, with such variations only as one's personality or circumstances at the moment suggest. But our wish to be adaptable and immediately useful leads us to teach engineers what we call Engineering English, to teach students in a business school what we call Business English, and students of journalism what we call Newspaper English, as though these were all different subjects to be approached by different methods.

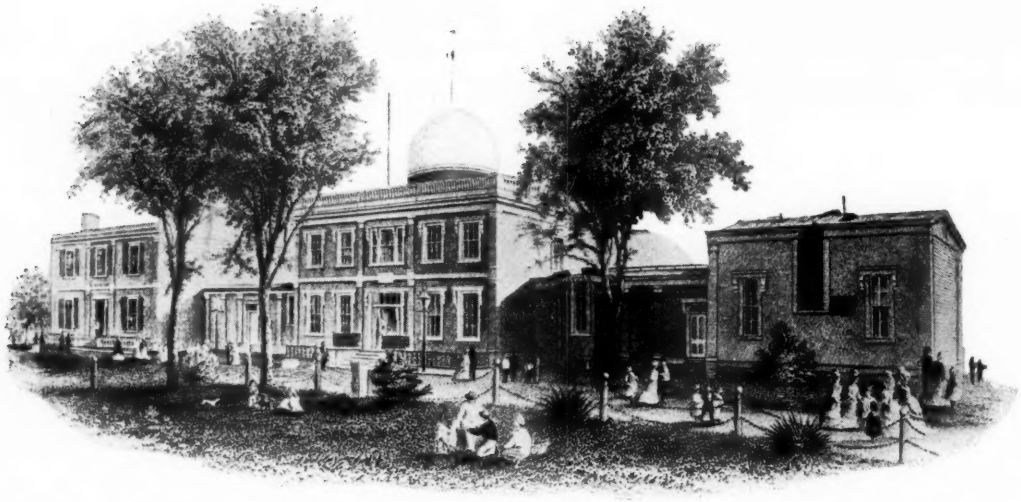
Wanted—Practical Results

What is more serious, perhaps, is that by directing so much of education to practical results we have lost sight to a large extent of that satisfaction in the mere play of the mind which characterizes the education of the fortunate classes in Europe. Even if this play of mind leads to a control of wisdom which cannot be called practical, yet it will remain, more than most Americans now admit, essential to a good life. The European whose mind has been made alert by the traditional disciplines often enjoys a knowledge of human nature and practices the habit of observing it; he is often, to put it in plain terms, wiser than we. The élite of society, the best educated women and men in Europe, have been taught to note the behavior of human beings, the possibilities and the limitations of our nature. Even the control of scientific principles and the habit of developing natural resources seemed slightly unimportant if along with such powers went a naïve and incomplete view of human life.

In recent years our attempts to secure social results by legislation have seemed ridiculous to Europe, not because the ideal of the legislation was ridiculous but because the form in which we put it revealed such ignorance of human nature, and even such indifference to the prejudices and impulses which must be reckoned with before we can secure coöperation from our neighbor. We can retort to Europe, if we choose, that the wisdom which the older country has long enjoyed has not been on the whole put to good use—that many of the problems with which we are now wrestling should have been solved long ago on the other side of the Atlantic.

Advancement for All Classes

But whatever satisfaction there is in a retort, there is more profit in recognizing the justice of the criticism. We shall undoubtedly keep our ideal of social advancement for all classes, and that ideal will continue to influence our educational program; if we should, however, add to the ideal of social advancement the ideal of humane wisdom, we might turn to good account some of the resources of European education which we now neglect.



An early view of the Naval Observatory in Potomac Park, showing the time ball on the flagpole. Its daily drop at noon was the beginning of the present system of daily telegraphic time signals. This building, erected in 1844, *was vacated in* 1893 *with the removal of the Observatory to its present commanding position on Georgetown Heights.*

HOW THE NATION KEEPS TIME

By GEORGE W. GRAY

A CENTURY ago a strange controversy agitated Congress. It centered in the proposal to establish a national observatory to determine the longitude of Washington and so fix a standard of reference for all future surveys. Ordinarily such an undertaking would have appealed to the common sense, as well as to the pride, of the young republic.

But the project was ardently favored by John Quincy Adams; and Mr. Adams's politics had earned him many enemies. These now mobilized to defeat his pet measure, and soon its merits were lost in a wrangle of partisan jealousies.

When Adams became President in 1825 he expanded the original idea. The observatory, he advised in his first message to Congress, should be a permanent center for research and discovery.

"Stuff and nonsense!" retorted the opposition—or words to that effect—and voted a vociferous no.

Thereafter, for twenty years, this project for a national astronomical center was a political football, biffed back and forth between opposing factions. Committee after committee investigated its possibilities, but each report in turn was either rejected or ignored. The Chief of Engineers of the Army prepared a detailed report, but it went the way of all the others. So did the recommendation of the Secretary of the Navy. Citizens of New York, Philadelphia, and Baltimore called attention to the business importance of correct longitude and petitioned Congress for official determination of a first meridian, but they succeeded no better than the others. The political majority was so set against Mr. Adams that in voting appropriations for the coast survey in 1832 it guarded against any diversion of funds by a proviso "that nothing in this act shall be construed to authorize the construction or maintenance of a permanent astronomical observatory." Congress would not even accept James Smithson's unfettered bequest of half a million dollars for the Smithsonian Institution until Adams's proposal to use part of it for an astronomical station was dropped.

And so the fight waged on. As late as 1842 Adams was still vainly struggling to get an observatory bill through Congress. A Cambridge University professor, reporting to the British Association on the state of astronomy throughout the world, remarked that he was unable to say anything of America, since, so far as he knew, no public observatory existed there.

But an observatory did exist!

Strange though it may seem in view of the repeated failure of Mr. Adams's bills and the repeated triumphs of his opponents, an astronomical observatory was already functioning under Navy auspices. One can scarcely reproach the Cambridge professor for ignorance when apparently no one in Congress—not even Adams himself—was aware of the institution.

It had come about quite innocently. The Navy needed accurate time for setting and rating the chronometers used by its navigators. There is just one way of accurate time determination, and that is the observation of fixed stars. Thus the officer in charge of the Naval Depot of Charts and Instruments felt it necessary to set up a telescope in Washington. In a circular building west of the White House he mounted a small transit

¶ Elaborate equipment and a staff of experts make it possible for the average citizen to set his watch by the official signals—accurate to the thousandth part of a second—broadcast daily by the government.

instrument thirty inches in length—not much bigger than Galileo's first "optik tube." There, in 1831, he began to observe the stars and to determine time.

That was the start. His successors ever since have been watching the stars and determining time. From that tiny telescope and those meager first observations has grown the Naval Observatory of to-day, with its corps of eminent astronomers, its million-dollar equipment, its world-wide service. To its credit are many notable discoveries: new members of the solar system; improvements in the tables predicting the movements of the sun, moon, and planets; important contributions to the science of eclipses. Nearly a century of solid scientific work has established our national observatory as a world center of research in the astronomy of position.

"The astronomy of position," Capt. C. S. Freeman, superintendent of the Observatory, told me, "has to do with such prosaic tasks as determining the positions of the heavenly bodies and computing their motions and orbits. We leave to the great astrophysical observatories—Mount Wilson, Lick, Lowell, Yerkes, Harvard, and the others—the fascinating problems of weighing the stars, taking their temperature, determining their origin and evolution, and plumbing the size and structure of the universe. Astronomical research at the Naval Observatory must focus on two very practical objectives: first, the determination and broadcasting of correct time daily; second, the compiling and publishing annually of the American Ephemeris and Nautical Almanac. These are our duties, very utilitarian, quite routine.

Commander L. M. Goldsborough, founder of the Naval Observatory. In 1830 he was ordered to take charge of the Depot of Charts and Instruments. This became the Observatory twelve years later.

"So you see," added the superintendent, with a smile and a wave of his hand, "there is nothing spectacular or sensational here. It is just a continuous round of heavy, laborious work—observing, computing, and publishing the results. Nothing exciting at all."

But the bare history of this place is exciting. All about are reminders of the men who have labored here: Goldsborough, the founder; Wilkes, who nursed the institution through its infantile years and, when money was needed to provide a new building, dug into his own pocket for the wherewithal; Gillis, first to get adequate Congressional recognition for the young hall of science, who developed it from a depot of charts and instruments into a national observatory; Maury, whose studies of the Gulf Stream and other ocean currents laid the foundation for our present Hydrographic Office.

The Two Moons of Mars

With that 26-inch telescope under the big dome yonder, Asaph Hall discovered the two moons of Mars. Astronomers called the red planet "the moonless Mars," but Professor Hall had an idea that it was not moonless, and, turning the great refractor on Mars at its opposition in 1877, he searched and finally found. The historic instrument, which was the largest in the world when it was built in 1873, is still in nightly use. It is interesting that the astronomer who was in charge of it when I called was Asaph Hall, Jr.

High Praise From Europe

Here are the lenses with which Simon Newcomb observed, in South Africa in 1882, the momentous transit of Venus across the face of the sun. On this astronomical project and the preparations for it, Congress spent more than $300,000. The weather smiled that day in Capetown, and Newcomb made a perfect observation of a rare event. The story is told with much interesting detail in his Reminiscences.

It was another Naval Observatory astronomer, Sears Walker, who thought to look back through old star charts to see if he could spot an earlier record of the recently discovered Neptune. He found it, charted in 1795 as a fixed star, and by that identification was able to work out the orbit of the new planet. This brilliant achievement occurred in 1847, a year before the death of John Quincy Adams; it must have brought a thrill to the old war horse—a thrill of pride and satisfaction and vindication. Praise and recognition poured in from Europe, and Walker's researches raised the young American observatory at once to a place of prominence and acknowledged importance.

To-day the positions of the stars and planets as computed here are so accurate that the International Astronomical Union has recommended their use by astronomers throughout the world.

Relative star positions provide the basis for accurate time determination—and that brings us to the activity by which the Naval Observatory daily touches the lives of millions of people. It sets time for the nation.

Ships of all nations regularly use its radio time signals, which have been heard as far off as New Zealand, off the southeastern coast of Australia, and in the Indian Ocean. Commander Byrd set his watches in Antarctica by Naval Observatory time.

The very layout of the Observatory grounds—a park of seventy-two acres on Georgetown Heights in northwest Washington—suggests the vast importance of time. It is your first impression of the place. You are traveling out from the city along a straight avenue, and suddenly the avenue bends outward and swings around the wooded inclosure as the arc of a large circle.

Follow to the center of that circle, as I did on a quiet morning last summer, and you find yourself at an underground vault. It is because of this vault that streets approaching the Observatory detour in deferential curves; for an act of Congress specifies that no public highway may come within a thousand feet of the "Clock Room."

That underground vault is Time's sanctum sanctorum. Here the three precious clocks that keep time for the nation tick their endless round of seconds in undisturbed quietude. One of the astronomers guided me down the dark stairs into the vault. We passed through three sets of doors to an insulated chamber where sensitive thermostats keep the temperature always at 84° Fahrenheit. The clocks stand on stone piers in glass compartments from which the air has been partly exhausted to reduce resistance to moving parts. Their delicate mechanisms are electrically driven, and every tick is electrically recorded upstairs by a pen on a moving scroll of paper.

A Nation-wide Hook-up

From this written record of their timekeeping, checked each clear night by observations of the stars, the sending apparatus is set for the transmission of wireless signals.

In the Time Room, in the main Observatory building, I watched the clock man set the signaling apparatus. It must be correct to the thousandth part of a second. These delicate adjustments he made with an electromagnet. The switchboard operator plugged in a line clear across the continent to San Diego, another to Key West, and others to Arlington and Annapolis, looping the Naval radio stations at these points into the sending circuit. Telegraph and telephone companies connected their wires; the clock man made his final check-up; all was in readiness. Then, on the exact stroke of 11:55, the sending clock automatically threw a single switch: "Click!" and standard time was going out to all the world.

Simultaneously a chronograph in the Time Room began to tick off the seconds as it wrote them down and as the four powerful radio stations—two on the Atlantic Coast, one on the Pacific, and one in the Gulf of Mexico—rasped them into the ether.

The signal continued for five minutes, with a one-second pause at each half minute, a five-second pause at the end of each minute, and an impressive ten-second silence just before the stroke of noon.

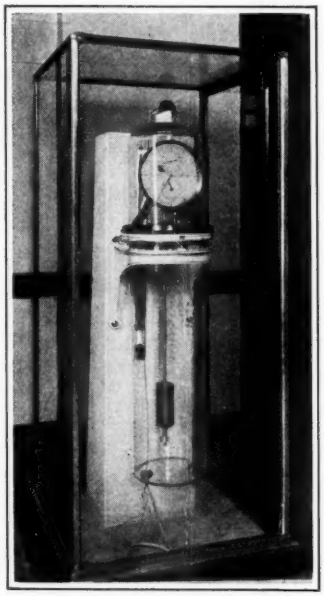
That's how the Navy broadcasts time. Thrice daily the signals are sent out—at noon, 10 P.M., and 3 A.M., Eastern standard time.

The time signals travel on wave lengths both shorter and longer than those used in ordinary broadcasting. The Arlington station transmits on five different wavelengths simultaneously, to insure reaching the various classes of naval ships and shore stations. The Observatory receives many letters asking what type of radio set is best adapted to receive the signals.

There is no record of when, why, or how the Navy assumed the public service of disseminating time, but the earliest picture of the Observatory, made in 1845, shows a time-signaling device on the roof. This was a hollow ball dropped from the top of the flagpole at noon. Twenty years later a wire connection with the fire-alarm system of Washington caused the time signal to ring bells in the police and fire stations; those who could not see the drop of the time-ball might set their watches by the sound of the bell. Local telegraph offices got their first Naval Observatory time in this way and soon extended the service to other cities. From this developed the present system of distributing "Naval Observatory time, hourly by Western Union," to more than 150,000 subscribers throughout the United States.

Time-balls, actuated by telegraphed signals from Washington, were installed at seaports along the Atlantic and Gulf Coasts. The practice of watching for the daily "drop of noon" to set watches, clocks, and chronometers became customary. Daily in front of the old Western Union building, in New York, gathered a crowd so great that frequently it jammed Broadway. Policemen were assigned to keep a lane open for traffic and protect the time-ball gazers from pickpockets. When the building was demolished a few years ago to make room for the present skyscraper the time-ball was removed to the roof of the Seamen's Church Institute, where it continues to drop each noon.

Meanwhile a new medium was developing. The first time signal by wireless was broadcast from the Boston Navy Yard on August 9, 1904, as an experiment. The farthest range then attained was fifty miles; but that was a vast improvement over the time-ball, which was invisible in foggy weather and at best could be seen only a few miles. By the end of 1904 two other Naval stations were sending time signals, and by 1909 the number of stations had leaped to nineteen. Gradually, as the range of sending apparatus increased, the number of stations was reduced. The station at Arlington, Virginia, with a range of 3,000 miles, began operating in 1913. A few years later came the more powerful Annapolis station, which has been heard repeatedly at a distance of 10,000 miles.



One of the three clocks that keep time for the nation. They are shut away in an underground vault, where temperature and pressure are kept uniform, and are touched only once in every four years for cleaning.

Precision Instruments

A question that is sometimes asked at the Observatory is: "Why must you bother with these delicate clocks? Why not set up a scientifically accurate sundial on the meridian and get your time direct from the sun by the noon shadow on the dial? Wouldn't that work?"

"No," answers Captain Freeman. "Even if the sundial were precise to a fraction of a second, and even if it were never incapacitated by clouds, it would not give standard time. The sun's apparent motion across the sky is irregular—some months fast, others slow, and never exactly uniform for a consecutive number of days."

It is really the earth that is slow or fast, for time is ultimately measured by the rotation of the earth. These

variations are caused by the fact that while we are rotating we are also traveling in a vast ellipse around the sun. In summer, when the earth is at the far end of its orbit, it travels more slowly; and in winter, when it is nearest the sun, faster. As a result, true noon may vary more than half an hour during the year.

Thus, on November second the sun is 16 minutes and 20 seconds fast. Noon comes that much ahead of the average. On February eleventh it is 14 minutes and 20 seconds slow. The effect of these changes is quite noticeable in early January, when the lengthening of the days appear to take place in the afternoon and the forenoons to grow shorter.

Guarding Against Discrepancies

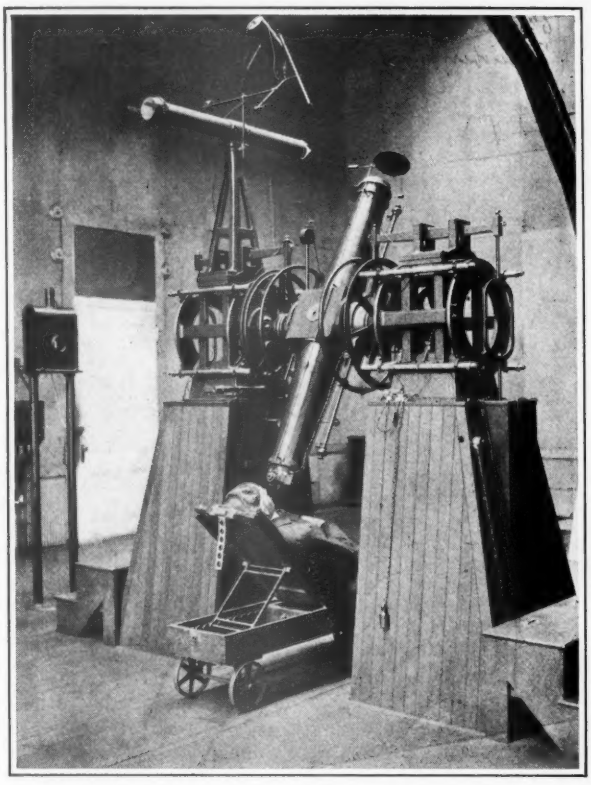
To smooth out these irregularities astronomers at the Naval Observatory compute the movement of an imaginary sun, the "mean sun," which comes to noon at exactly the same second each day. But since there is no mean sun to observe, they use fixed stars as fundamental points for determining the period of one rotation of the earth. There are 170 of these "clock stars," which include such conspicuous orbs as Vega, Capella, Deneb; they are all of well-determined positions, and therefore the transit of each across the meridian is an exact measure. Every cloudless night observers at the Naval Observatory make these exact measures of siderial time and use them to check the standard clocks and determine their errors.

Errors? You may wonder at the suggestion that those sacred timekeepers down in the vault are capable of error. But nothing is perfect. Each clock has its foible, though the discrepancy will not average more than a hundredth of a second in twenty-four hours.

One of the astronomers in the Time Room explained: "So long as the errors are constant, or change uniformly, they are not serious. We compute them to a thousandth of a second and make a corresponding allowance in setting the sending apparatus for the daily signals. But when an error creeps in large and unexpected—as happened five years ago, when one of the clocks suddenly went off half a second and then returned to its usual rate—we are alarmed. It is to guard against such mechanical idiosyncracies that we have three clocks. They are all the same size and make and about the same age. When cloudy weather prevents observations of the stars, each clock is a check on the others. It is highly improbable that all three would become erratic the same day."

An even more perfect timekeeper is wanted, however. When I was in Washington the supervisor of the time service was working on a new clock. This invention of a member of the astronomical staff would never be recognized for what it is by the average citizen. It has no wheels, no hands, no dial. Its basic principle is a gravity escapement actuated by the fall of a one-sixteenth-ounce weight. An electric drive lifts the diminutive weight every thirty seconds, and its fall gives the impulse to the pendulum directly. Extreme care has been taken to eliminate every superfluous part and to reduce friction to the minimum.

Several research laboratories are experimenting with the vibration of quartz crystals as a means of measuring time, to determine if they are more regular than pendulums. These experiments are being followed with keen interest by the Naval Observatory; their results will undoubtedly be taken into account if any changes are made in the equipment of the Clock Room.



Time is measured by determining the passage of stars across the meridian. The Observatory telescope is a transit circle, and the instant of the star's passage across the center of the field is recorded electrically by a chronograph.

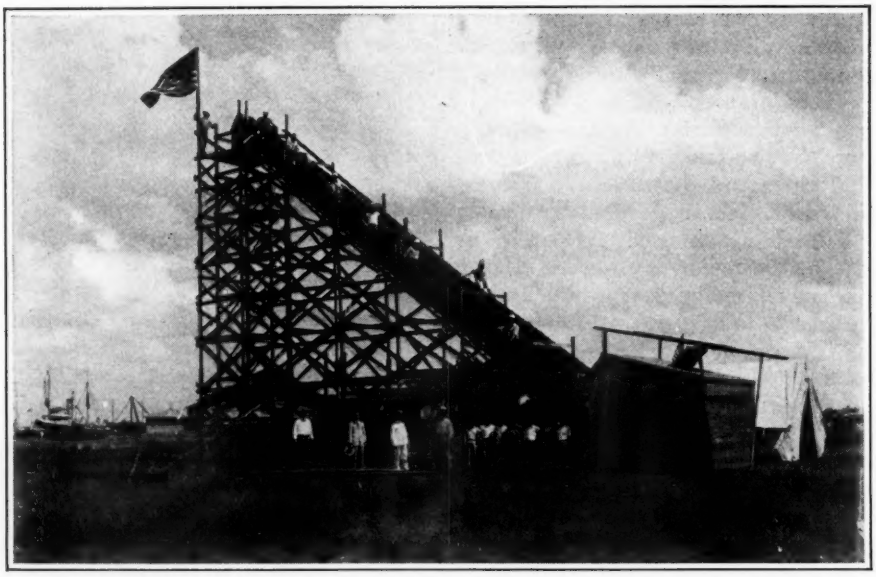
Not only the clocks but the radio signals have an inevitable lag which is closely watched by the time experts. The total error in time of transmission from the Naval Observatory to the radio stations is recorded daily, and at weekly intervals the computed corrections are sent to such as are interested. The error averaged thirty-one thousandths of a second last year.

An Almanac for Navigators

Surprisingly, many institutions and people are interested in these infinitesimal quantities—not only the other astronomical observatories, which depend on the Naval Observatory for time, but also radio laboratories and other research institutions, longitude surveyors, observers of gravitation and magnetism, and geophysical prospectors for oil and other minerals. The ultra refinements on which some of these investigators base their calculations require accuracy to the thousandth part of a second.

The Naval Observatory is interested not only in correct time but also in correct star positions, for safe navigation requires both. Hence the Observatory publishes the American Ephemeris and Nautical Almanac. This is an annual handbook which tabulates in advance the predicted positions of the sun, moon, planets, and bright stars at given hours for every day in the year.

A friendly coöperation among the nautical-almanac offices of Great Britain, Germany, France, Spain, and



Eclipses of the sun take Naval Observatory astronomers to many parts of the world. This shows the erection of the giant 65-foot camera tube in the Philippine Islands with which the Observatory party on May 9, 1929, successfully photographed a solar eclipse.

the United States has eliminated much former duplication of work. Each office is now responsible for certain calculations which it shares with the others. Thus, the prediction of eclipses is intrusted to the Naval Observatory, and its computations of the time and paths of eclipses are used by the European countries as well as by our own.

Flying Made Easy

Even so, the American work is voluminous. Twelve mathematical astronomers (in addition to four outside part-time workers) are continually employed in computations, reductions, and other labors which go into this book. It is widely used throughout the world by naval and merchant navigators, astronomers, surveyors, and aviators.

To serve aviators more directly, the Observatory began in September, 1929, the publication of a supplement, the Lunar Ephemeris. This is a compact manual of positions of the moon. Its particular use will be in the employment of the moon in conjunction with the sun for daylight determination of position. The sun and moon are visible twenty-six days of every month in clear weather, and by crossing a sun observation with a moon observation it will be possible for an aviator to determine his position exactly within a few minutes of time. The usual procedure in finding position—by shooting the sun only—requires two or three hours. Several repetitions of the new process will enable the aviator to determine the "drift" of his airplane when above the sea, a problem ordinarily very difficult. With a bubble sextant and an accurate wrist watch, a pilot can make quick observations and, by reference to the Lunar Ephemeris and the Nautical Almanac, quickly determine a series of positions.

The Navy's latest type of navigation watch is an invention of Lieut.-Commander P. V. H. Weems, who is also responsible for suggesting the Lunar Ephemeris. Its distinctive feature is a separate movable dial under the second hand which enables the navigator to set the watch correct to a second. Most watches are settable only to a minute. The installation of these movable dials in watches for the Navy aviators was being made last summer in the instrument shop of the Observatory—for along with its important astronomical responsibilities, the institution is still the Naval depot of instruments. Charts are cared for by the Hydrographic Office, but every instrumental device needed in navigation—from a ten-cent balloon used to detect wind direction to a $30,000 gyrocompass used to steer a battleship—is tested, purchased, and conditioned for the Navy by the Observatory.

Nor is the public overawed by the title, "Naval Observatory." Three thousand visitors called last year. Every Thursday is "open night," when one of the telescopes is released for the use of the public and an astronomer is on duty to show the stars. Always there are more applicants than there are tickets. Until recently, people in Washington had the habit of telephoning the Observatory at any hour to ask the time. The calls mounted to two thousand daily, completely monopolizing all telephone lines into the Observatory, before the superintendent called a halt. Letters pour in: a hospital executive wrote for directions for placing a sun porch to afford the maximum daily sunning for his patients; a home builder sent a plan of his lot and surroundings and asked advice in placing his house so as to enjoy sunlight and southern breezes; amateur astronomers write for instructions on observing.

Research and Routine

Meanwhile, in these quiet rooms and sheltered halls, research goes forward. Daily since 1900, the weather permitting, a photograph of the sun has been made. The longest consecutive record of sunspot photographs in the United States is here, also the most complete record of eclipses. The astronomers now are preparing for the exceptionally near approach of Eros next year. John Quincy Adams dreamed of a center of "new discovery"; this is such a place.

¶ Having made millions in perfumes, the versatile Corsican launched a Paris newspaper, championing the workman's cause, that sells at less than cost yet pays its way. Ridiculed, boycotted, sued by the entire French Press, Coty's sheet simply would not be downed. Mr. Train, an American resident of Paris, has had special opportunities to study an enigmatic personality.

FRANÇOIS COTY AND THE WAR OF WORDS AND INK

By ARTHUR TRAIN, JR.

BAGNOLET: A newspaper for four francs a year? Do you mean to tell me that you ask only four francs from each subscriber?

MONTIZON: Better than that, my dear sir; I *give* the four francs.

BAGNOLET: What? You give them? But this is ruinous!

MONTIZON: Not at all; my system is essentially simple. You know, the ordinary newspaper at forty francs a year would soon go into bankruptcy without the advertisements, which bring in annually 100,000 francs of net profit.

BAGNOLET: Ah! Bah! 100,000 francs. . . . I didn't realize they brought in such a sum.

MONTIZON: Yes, my dear sir—100,000 francs of advertisements, paid by brave business men who lick their lips at the thought of the twenty thousand subscribers of the abovementioned newspaper. Well, then, a newspaper with five times as many subscribers would also have five times as many advertisements, or 500,000 francs' worth.

BAGNOLET: But how do you find 100,000 subscribers?

MONTIZON: I am sure to find them, since I pay them. I give them four francs a head. My subscribers cost me 400,000 francs, and as my advertisements bring me in 500,000 francs I make 100,000 francs net profit.

BAGNOLET: Ah, my friend, it is superb, it is magnificent. I understand perfectly; I grasp your system. You put down four, you take back five, you take back six, you take back everything—your fortune is made!

—From The Bohemians of Paris, the Ambigu Theater, 1843.

THE PUBLIC of Paris has for the past two years been watching a comedy very similar in theme to the one quoted above, but with the world of journalism as its stage and a newspaper owner as the protagonist. Not until now has the comedy reached its climax, with a twist in the plot that has surprised everybody in the audience; for all France has been waiting to laugh at François Coty, king of perfumers and newspaper editor extraordinary, and now it is Monsieur Coty who is chuckling softly. The public, shepherded by the newspaper men, who hate Coty for underselling them, and by the politicians, who hate Coty for underestimating them, have been led to expect that the militant Corsican and his fabulous fortune would both be swept under by his latest extravaganza—furnishing the public with a standard newspaper at less than half of one cent, or very much under cost. The launching of the newspaper *L'Ami du Peuple* under a barrage of opposition from the united press of France—opposition beginning with sabotage and ending in the law courts—is a story about a year and a half old. This, however, is news: Monsieur Coty is not ruining himself at all. *L'Ami du Peuple* is beginning to pay its way.

In order to have the field clear for his experiment, Monsieur Coty had to withstand the attack of a coalition of some forty newspapers, headed by the five leading Paris morning dailies, known as the Big Five and also referred to as the Consortium: *Le Petit Parisien, Le Matin, Le Journal, L'Echo de Paris,*

and *Le Petit Journal*. Although the smaller newspapers are inevitably dependent upon somebody's purse, the Big Five are bona fide and self-supporting. Read all over France, they have an enormous circulation and a predominating influence. They and the thirty-odd lesser papers that make up the national French newspaper federation have agreed on the minimum rate at which a newspaper can profitably be sold and are bound not to offer themselves to the public for less. That rate is twenty-five centimes—five sous, or approximately one cent in American money.

"The Friend of the People"

Coty had acquired *Le Figaro* in 1923 and used it as a vehicle for his anti-Communistic ideas. But *Le Figaro* was the newspaper of the élite. M. Coty had observed how many among the thousands of workmen employed in his perfume factories depended exclusively for reading matter upon the Communist mouthpiece, *L'Humanité*. So he evolved the idea of a newspaper selling for ten centimes—a price within the reach of the most modest purse. The paper would have an enormous circulation and be able to charge high advertising rates. It would pay its way. It would also pay its editors, reporters, and copy boys—here Coty followed in the trail blazed by William Randolph Hearst—more than they would receive on any other paper.

The first number of *L'Ami du Peuple* was to appear March 20, 1928. A contract had been duly drawn up with the Messageries Hachette, a monopolistic organization, for its distribution. Publicity was to be handled by the Havas Agency, which performs that office for most of the leading newspapers.

But the Big Five got wind of what was about to happen, and the feudal lords of the press, as Coty likes to call them, held a council of war. They decided to strike hard and quickly. They constrained the Messageries Hachette to break its contract; they instructed the Havas Agency to refuse to handle the publicity of Coty's as yet unborn brain child.

The Corsican accepted the challenge. He sued the Messageries Hachette for breach of contract, organized his own system of distribution, arranged other publicity contracts. *L'Ami du Peuple* appeared for sale on the second of May, 1928.

A Bitter Struggle for Survival

The smoke has not yet cleared away from the battle that followed—the Battle of Words and Ink. The Consortium brought column after column into action. Not content with using whole pages in *L'Ami du Peuple* and *Le Figaro* to defend himself, Monsieur Coty plastered the entire city of Paris with posters. But the battle did not end with words. Every known channel of distribution used by the Consortium was closed to the offending sheet. If a news vender tried to sell it he was boycotted. Special inspectors made the rounds of the kiosks. Scurrilous imitations of it were placed on sale. In some parts of the city street fights broke out.

L'Ami du Peuple would not down. It sprouted from the sidewalk. It appeared in gasoline filling stations, at the baker's, in the bookstores, the shoe stores, the cafés.

Then the Consortium took the case before the courts. Monsieur Coty, they alleged, was indulging in unfair competition. He cut the price of his newspaper to a point well below what it cost him and was out to ruin the other papers. If *L'Ami du Peuple* should be allowed to grow, 150,000 hard-working journalists would shortly be out of bread. Moreover, Monsieur Coty, they claimed, was violating the agreement as to price to which he had subscribed as owner of *Le Figaro* and *Le Gaulois*. But the main point was this: that no newspaper could be sold for two sous and live, without outside alimentation. If newspapers were to be sold for less than cost, then the way was open for any rich individual or any foreign power to hire readers to believe its propaganda.

Monsieur Coty replied that a newspaper priced at two sous could and would live without outside help. He pointed out that the price fixed by the Consortium was purely arbitrary, in as much as there were no restrictions as to size, quality of paper, quality of editing, or premiums, prizes, and other inducements. A six-page newspaper at two sous was the equivalent of a fifteen-page newspaper at five.

Coty also argued that *L'Ami du Peuple* was no party to the price-fixing agreement, as it had not been in existence at the time the agreement was made. He drew attention to the fact that many a five-sou newspaper had made a fortune for its owner; he drew a deep breath and declared that if he chose to run a newspaper without making a fortune it was his own business.

Suit and Countersuit

The perfumer waxed eloquent. There rankled in his memory the fact that before firing the opening guns of the campaign, Monsieur Mouthon, owner of *Le Journal* and other newspapers, invited a number of cabinet ministers to his château at Chilly-Mazarin and—I quote Monsieur Coty—"behind a rampart of fine old bottles outlined to them the operation which was to end in the assassination of *L'Ami du Peuple*.

"The Press," asseverated Coty, thinking of the bottles of Chilly-Mazarin but generously including every newspaper in France in his apostrophe, "is the accomplice of those who rule us. It is silent as to all their crimes, covers all their faults, makes itself a party to their treachery, and receives, in return, guaranties of impunity."

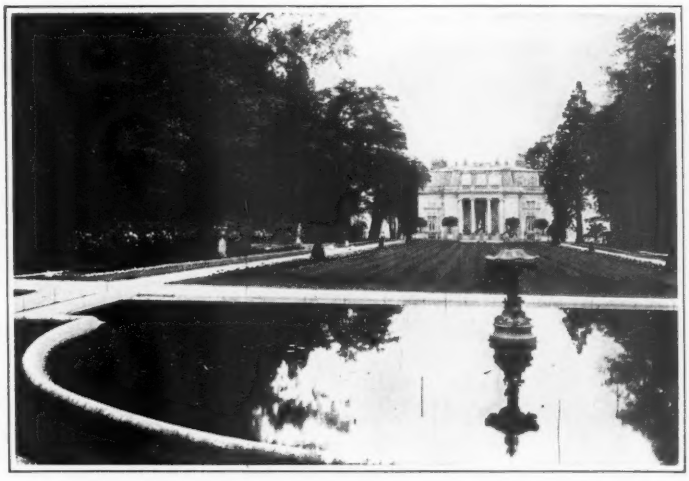
This was too much for the press referred to. Collectively, as the federation, forty-odd papers sued Coty for defamation of character. They limited their demands to the traditional damages of one franc, and they got it.

Monsieur Coty could well afford to pay them their one franc. He won his suit for breach of contract against the Messageries Hachette. He also emerged the victor in the main suit brought against him by the Consortium. The verdict was awaited with interest by the entire French nation because of the principle involved of the liberty of the press. The Tribunal adjudged the Big Five, instead of Coty, guilty of unfair competition and of malice, and ordered them to pay him 1,200,000 francs in damages.

Thus it is that Monsieur Coty has incurred the enmity of the press of the nation. If the lay reader wishes

to find out what Coty is really like or even what he is driving at he has to fight his way through a mass of sarcasm and ridicule. Coty has been more lampooned than almost any other contemporary Frenchman. His critics have tried to turn him into a figure out of *opéra-bouffe*. A self-made man, he becomes a nouveau riche. An admirer of Mussolini, he becomes a dictator's apprentice. A Corsican and a relative of Napoleon, he is accused of conspiring toward a coup d'état. Everyone has been led to expect that the fantastic perfumer's latest hobbyhorse would throw him, and throw him hard. But it hasn't. In its first month *L'Ami du Peuple* sold eight million copies. A year later it sold, all editions, eighteen million copies.

François Spoturno, who took the name of Coty, was born in Ajaccio in 1874. His grandfather, Captain Spoturno, who was killed at Moscow, was a second cousin of Charles Bonaparte, the father of Napoleon. Orphaned at a very early age, Coty was brought up in extremely moderate circumstances by his grandmother in Marseille.



The magnificent château of Countess Du Barry, mistress of Louis XV, at Louveciennes, near Paris; now owned by Coty. The king built it for her at the height of her power over him. The most brilliant and distinguished people of the time visited her here, including Benjamin Franklin and Emperor Joseph II. The building is now classed as an historic monument and is subject to governmental supervision.

Perfumes

At eighteen he drifted to Paris and became a sort of runner for his friend the senator from Corsica. This operation not proving sufficiently lucrative, he became a mixer of perfumes. It is said that he went with a little vial of perfume of his own concoction to one of the big department stores of Paris. In the crowd a woman collided with him and broke the vial. Coty was in despair until the surrounding customers, sniffing a new and delicious fragrance in the air, began to bombard the clerk with orders; whereupon Coty was given a special window display and an order for sixty thousand francs' worth of the new perfume.

Coty owes his success in the perfume business partly to the world boom in cosmetics but also to the steadfast application of three main principles. The first is that perfume is a luxury and therefore can be sold at a high price. The second is that if it is to be sold at a high price, it must be the best that can be made. The third is that its luxuriousness must be emphasized by a beautiful setting. Coty's perfumes owe a great deal to the artist Lalique and his exquisite "mourners of antiquity." Another reason for Coty's success is his belief in the American principle of the integration of industry. He describes himself as "a laborious artisan, perfected in ten different trades to assure the success of one."

Since the accumulation of the enormous fortune—he is one of France's few billionaires—which has come to him in a few years, mostly after the war and mainly from the sale of his products in America, he has successively liquidated his holdings, although retaining the position of technical adviser at a salary of nearly a million a year.

Discredited as Senator

For seven years Coty cast languishing eyes at *Le Figaro*. The latter was then in the hands of Edouard Calmette, son of the man who was so dramatically assassinated by Madame Caillaux on the eve of the war. Coty was a member of the great pink-but-not-red Radical Socialist party. Calmette vowed he would never sell his paper to a Radical Socialist. Coty thought it over, changed his hue, and bought *Le Figaro*. The political repercussions of this chameleon-like performance were great, for Coty, when he moved to the right, moved very far to the right indeed. Today even the conservatives regard with puzzlement his neo-Fascistic tendencies.

Having acquired a newspaper, Coty presented himself the following year as a candidate for senator from his native Corsica. He was elected. Thereupon were forthcoming a series of affidavits from Corsicans, prominent and otherwise, who alleged that they had been encouraged to vote for M. Coty by arguments that would ring true—when chinked together. The election was invalidated by the senate, and that was the end of Monsieur Coty's active political career.

In the early spring of 1926 the franc was threatening to go the way of the German mark. The Herriot cabinet had left the pound sterling at 92 francs; the Painlevé cabinet at 120 francs; and the Briand cabinet at 135. That crying question of the day was how to prevent the collapse of the national currency.

To the Rescue of the Treasury

The idea of a popular subscription was in the air. The year before the Italian people had been called upon to pay in this way the first installment of the nation's debt to America. In France a group of business men had suggested a sinking fund to relieve the treasury. On February fourth Monsieur Coty, with his usual verve and ruthlessness, came out with a front-page editorial the gist of which was:

People of France! The politicians are worthless! As long as they have a strangle hold on the finances of the nation the collapse of the franc will continue. Let us, by popular subscription, create a fund to relieve the treasury of its more

pressing obligations—a fund which by constitutional amendment shall be directed by business men without political mandate. It is a good thing that I should give the example. I hereby offer one hundred million francs to start the fund.

Coty's project was enthusiastically accepted. Archbishops and marshals of France wrote him letters of commendation. Townships and even villages sent in their collective mite. Contributions began to pour in by the hundreds and thousands. In the middle of the applause and the rain of coins into the hat the blow fell. The government accepted the principle of the national autonomous sinking fund and created a committee to draw up the project. On the list of those invited to join the committee Monsieur Coty's name was conspicuous by its absence.

Contempt for Officialdom

Monsieur Coty groaned aloud. "The committee contains some people of value, and some of very little value," he lamented in *Le Figaro*; "it even contains representatives of newspapers that had not even whispered one word of my proposition. I had not expected that I myself would necessarily be chosen, but there are plenty of men on my staff——"

One would be inclined to sympathize with Coty were it not that he had so consistently dwelt upon the incapacity of members of the government. He considered that business men showed a lamentable indifference to active politics, with the result that the electors could choose only among "poor devils of the twentieth grade," who were made legislators because nothing better offered. He has said: "We have in France an abundance of able men, but they are either driven from public employ or withdraw disgusted and go into private business. Meanwhile the government inherits all the castaways of private enterprise whose indolence, incapacity, and natural servility lead them instinctively to the public crib."

That the "castaways" should return the compliment by not inviting the publishers to work with them is understandable.

François Coty's personality is enigmatic. No respecter of persons, he is always ready for a good scrap, but he does not look the part. He is small, well-kept, with a clean-shaven, rather expressionless face and intelligent eyes. A French writer has made the cruel observation that one is tempted to mistake him for his own valet.

A Château for a Factory

It is no secret that the majority of the writings to which Monsieur Coty signs his name are the work of scribes, not to say Pharisees. Monsieur Coty himself remains uncultivated and unlettered. But he has mingled on equal terms with so many people of importance that he has acquired a certain verve which bridges him over the gaps. He is, moreover, a shrewd judge of men. He has passion, animation, eloquence, a remarkable memory, and a prodigious faculty of assimilation.

Some of Coty's ideas have been as extravagant as those of his confrere, Citroen. He wanted to buy the château of Chambord, one of the ancestral seats of the Bourbons, and make it into a perfume factory. He wanted to transform all of Corsica into one gigantic field of flowers—for industrial purposes, of course.

Speaking of châteaux, it is interesting to know that Coty rented the pavilion of Longchamp in the Bois de Boulogne for very little from the city of Paris, razed it, and built a château costing several millions. In addition he has a house in the Avenue Raphaël, where he receives visitors and the directors of his perfume and journalistic enterprises—all of which does not prevent him from preferring to eat and sleep at the Hotel Astoria. Perhaps you may remember reading that when the Young Plan was being drafted the reparations experts, who had planned to use the Hotel Astoria, were bundled off to the Hotel George V. The reason for this was that a long-standing client of the hotel did not wish his tranquillity disturbed by any conference. So the master minds of the financial world were forced to beg their board elsewhere, while the client—you have guessed that it was the subject of this sketch—remained. In Touraine he owns the château of Montbazon; on the Côte d'Azur, the late James Gordon Bennett's villa, "Nanouna," and others. And he has just bought the domain of Louveciennes from Monsieur Loucher, while in Corsica he has two domains, Barbicaja and Scudo.

Little has been said thus far about Coty's fondest aim, what he somewhat grandiloquently calls the "crusade of nations"—against the Reds. Liberals smile at the idea of a billionaire's bolstering up the capitalistic social organization; he cannot be disinterested, they assert. Of course he is not disinterested. A democracy is not run by disinterested people but by partisans who continually compromise. It is a good thing that someone should champion law, order, and discipline in France, where individualism prevails and where so many people represent extremes of political thought.

Where Napoleon Came to Dream

One writer maintains that Coty has rattled the bogy of communism enough to give colic to the bourgeoisie. But Monsieur Coty, with his dozen factories in the Red zone, is in a position to know much about the potentialities of communism, and I think he has a right to keep on rattling.

Against the revolutionary wave Coty has erected a bastion of organizations with a marked Fascist tinge. Outside of France, Coty's rôle has been to act as liaison agent of an entente—the "united front"—between his own country, Italy (through his friend Il Duce), and England. He has worked in close collaboration with the British Secret Service; which has led his enemies to assert that, as the tool of England, he is trying to drag France into a war with Russia to save India from the Soviets. This is, of course, nonsense. And those extremists who do not consider him to be under the paw of the British lion accuse him of wishing to follow in the footsteps of that other Corsican who changed the face of Europe. This is nonsense too; but Coty sometimes thinks of his distinguished cousin. In a list of benefactions which Coty has made to Corsica—a list comprising such useful but unromantic items as banks, hotels, and hospitals—one comes across the following entry:

"Twenty-five thousand francs, to put a grill over the grotto where Napoleon came to dream."

MAKING THE STAFF OF LIFE

By EARL CHAPIN MAY

GENERAL CADWALLADER C. WASHBURN—school-teacher, store clerk, government surveyor, banker, lumberman, and statesman—made a poor start with "Washburn's Folly." In an era when a large-sized mill at Richmond, Baltimore, Philadelphia, Rochester, Buffalo, or St. Louis regarded five hundred barrels of flour as a first-class daily output Washburn's "biggest mill west of Buffalo" produced 850 barrels daily from "twelve run of stone."

But there were ninety other mills in Minnesota. Many of them were on St. Anthony's Falls at Minneapolis. They competed keenly with the monster "Folly." The lessee of the "Folly" failed. Under pressure of a trying situation Washburn found an efficient partner in an Eastern miller named George H. Christian.

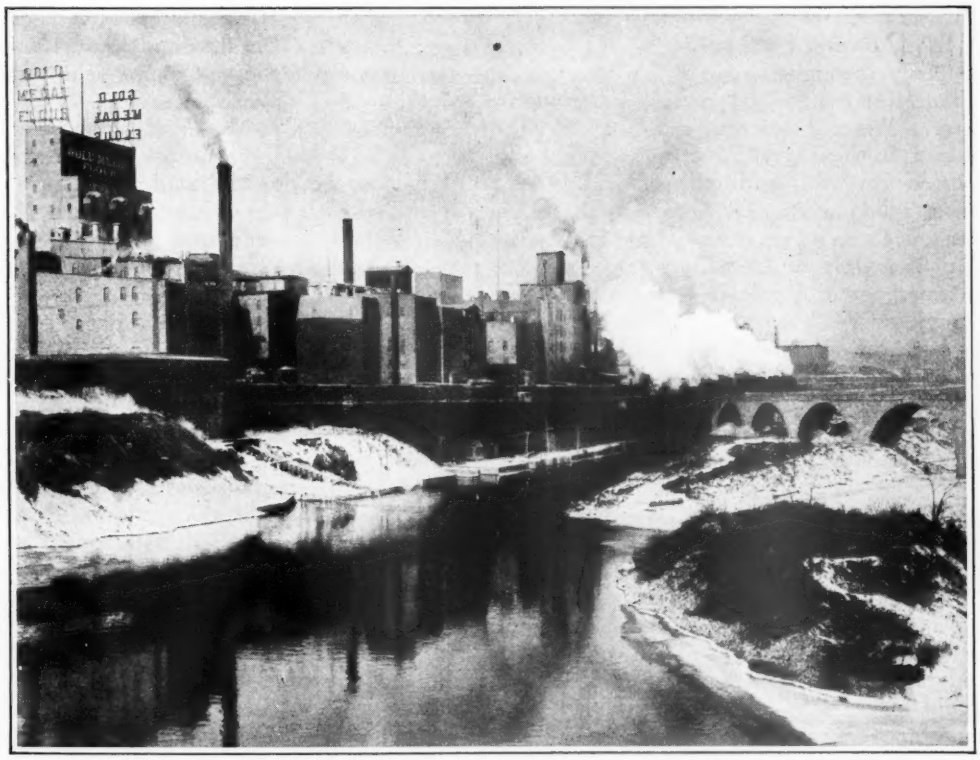
A small army of Civil War veterans had followed General Washburn into Minnesota, where they raised hard red spring wheat successfully. The millers were not so successful with it. Northern spring wheat made better and more nutritious bread than its soft, starchy, Southern, winter-grown competitor, but because the Northern wheat berries were flinty it could be ground only by setting the millstones so close together that the bran was pulverized with the kernels. The resultant dark winter wheat flour was regarded by housewives as inferior to the white bread made in warmer latitudes, and their attitude affected market values.

For example, the Chicago market quoted winter wheat at from 97 cents to $1.07 a bushel, spring wheat at from 74 to 87 cents a bushel. Winter wheat flour sold at from $5 to $5.50 and spring wheat flour at from $4 to $4.75 a barrel. Much spring wheat not consumed at the source of supply was shipped from the Mississippi River to St. Louis to be mixed with the whiter soft-wheat flour.

That was the situation facing the army of Minnesota hard-wheat growers when peace followed war between the states. Yet Minneapolis became the world's greatest flour milling center. A French millwright, Edmond N. La Croix, started Minneapolis toward its eminence by inventing in 1871 a machine called the middlings purifier. It was perfected in General Washburn's mill, and it changed the Northwestern flour situation.

In all human progress there is some tragedy. La Croix personifies it in flour milling, for La Croix, by developing in America a device for "purifying" middlings, inaugurated a new era in the industry and made American flour supreme in the world.

Though educated, La Croix was not proficient in English. Moreover, he was neither shrewd nor suspicious. Consequently, when he continued his experiments under Mr. Christian and that gentleman improved on them by hand-brushing the flour which clogged the "purifier" cloth, and another employee noted the improvement and patented it and the



Minneapolis has been for years and is now the center of the country's flour milling industry. The plants of the millers are grouped about the Falls of St. Anthony, on the Mississippi.

purifier, the Frenchman was deprived of the profits of his ingenuity.

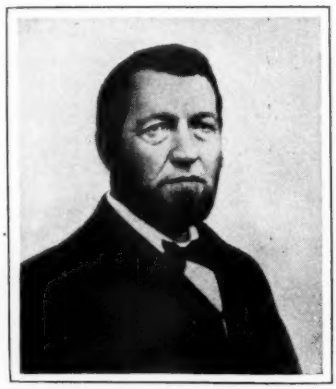
The patentee profited by his patent. In order to dispose of La Croix's claims, which, though without legal status, were a disturbing element, the patentee offered the Frenchman a large sum of money. La Croix refused the offer and thus assisted the Millers' National Association in compromising with the patentee and his associates. That compromise ruined La Croix. He and his family died in poverty. There is small comfort in the thought that a few millers joined in pensioning the surviving nephew of the originator, in this country, of the purifier.

A Money Loss of Millions

The purifier gave spring wheat superior color and bread-making qualities. It commanded a premium over its winter-wheat competitor. Under the impetus of demand, spring-wheat cultivation developed amazingly, emigrants spread over Northwestern lands, and flour milling became the chief industry of that region.

Minneapolis, chief milling center, was gathering the first fruits of the purifier process when it met with the greatest disaster in its history.

Never had the plains of Minnesota and the Dakotas produced such crops of hard spring wheat; never had the mills been so taxed to their capacity; never was there greater promise of prosperity in the "Bread Basket of the World" than on the afternoon of May 2, 1878. It had been a peaceful, drowsy day. The odor of wheat and flour clung to mills on both sides of the Falls of St. Anthony. Fine, white dust floated lazily through the air as the day shift left and the night shift went on watch. Without warning a terrific explosion in the largest Washburn mill lifted its roof hundreds of feet. Flame followed in a solid sheet. In three minutes explosions wrecked three other mills. Three more were destroyed by fire. Only a few mill properties were saved. Eighteen people lost their lives. The money loss ran into millions.



John Crosby, Sr., whom Cadwallader C. Washburn called from Maine to help manage his business. A dry sense of humor assured his popularity.

Two days after the catastrophe General Washburn, summoned hastily from his gubernatorial duties at Madison, Wisconsin, was in command of the devastated district, laying out a new mill in his shirt sleeves. That mill and others followed it, but they were built and operated on principles which made flour-dust explosions well-nigh impossible. No similar disaster has occurred in Minneapolis milling history. The number and size of mills at Minneapolis increased until it became the chief milling center of the world.

Discovery and adaptation of the purifier did not end the reign of millstones, which rumbled slowly at time-honored tasks. The purifier improved the quality but did not increase the speed of making flour.

Then came another revolution in flour milling. For several years American millers had known that millers of Budapest, Hungary, were making superior flour by using porcelain or steel rolls instead of or possibly in addition to millstones. But the "Hungarian process" was a jealously guarded secret.

In 1878 American mill builders experimented with porcelain rolls from Zurich, but they were not considered practical. One year later General Washburn built the first complete automatic roller mill in the world. Steel rolls were substituted for the millstones. The capacity of mills increased enormously. The grist mill was rapidly abandoned. Rolls increased the millers' profits. The "patent" process became popular. Centralization of plants became essential. Large mills absorbed the smaller ones.

This process of extinction has continued. There are twenty thousand fewer flour mills in this country than functioned half a century ago. The old grist mill has virtually disappeared, except as a curiosity or a grinder of local feeds. The great merchant mill, with a capacity equal to twenty or more small units, has been developed through mechanics. A more recent economic revolution has brought about many horizontal mergers with centralized control.

Before General Washburn died, leaving a million dollars' worth of mills, he had called John Crosby to his assistance. Mr. Crosby was a progressive, a successful miller, with a sense of humor which endeared him to his associates. His shrewd sayings are still quoted in milling circles.

General Washburn and his brother, Senator William D. Washburn—at one time a member of the firm—were impressive gentlemen who bore themselves with dignity. One day the stencil cutter brought to Mr. Crosby a design for a new barrelhead brand. It was necessarily of crescent shape, the first and last letters smaller than those forming the middle of the Washburn name.

Mr. Crosby glanced at it dubiously. "It's no use, my boy, no use at all. It will never do," he said. "Might as well try to spell God with a small *g* as Washburn with a small *w*."

Merchandising Problems

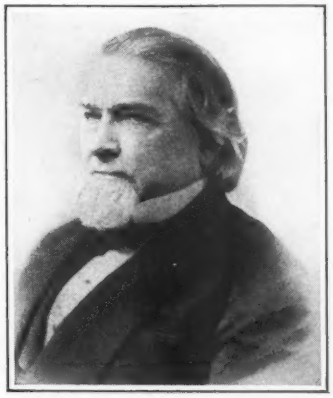
Hitherto successful milling had rested chiefly in plant operation rather than in the flour selling. When, in the late '80's, John Crosby died, leaving his sons, John and Franklin, to carry on, selling the flour was more important than making it. They called on James Stroud Bell, grandson of Isaiah Bell, who came out from Philadelphia. Besides his early and hereditary affiliation with milling, James Stroud Bell, with his brother, Samuel Bell, had bought and sold large quantities of flour in Philadelphia. Delegating technical details of operation, he devoted himself to developing a new plan of merchandising and became the greatest merchant miller of his time. I think this opinion is justified by his record as a flour merchandiser.

While merchant mills had increased their output and territory they had, prior to 1903, generally operated in the vicinity of their raw supply. This had disadvantages. A failure or partial failure of a crop, or a

temporary lowering of crop quality, handicapped the sales department. Freight rates were no longer based on tonnage of a certain commodity from a given place but upon the distance from mill to market. This change gave certain milling advantages to new localities and overcame natural forces which originally dictated the building of flour mills.

Realizing that if Minneapolis merchant millers desired to escape a decline that had overtaken other milling centers in America and that if they wished to retain and extend their trade they must be more elastic in operating activities, Mr. Bell, instead of attempting to increase the milling capacity in one locality, decided to acquire properties in various parts of the country. This meant a nationalization of interests.

He thus anticipated the tendency toward centralization of administration over operating units established at strategic points which has marked the development of the American milling industry during the past quarter century. The Minneapolis company directed by James Stroud Bell had successfully purchased and managed a Montana milling company. In accordance with the new Bell policy, it acquired a mill at Louisville and built a larger mill at Buffalo—points strategically important for the Southern trade and for Eastern and export business. These ventures soon demonstrated the feasibility of his policy.



When his mill was destroyed in 1878 by a terrific explosion, Cadwallader C. Washburn left his gubernatorial desk in Madison and hastened back to the scene of the disaster. Two days later he was out in his shirt sleeves laying plans for a new and better mill.

While Bell, master merchandiser, thus changed the American milling scene, other forces made many changes in the Southwestern soft-wheat belt. At the opening of the twentieth century our spring-wheat mills held a virtual monopoly on export trade. Much of this monopoly can be credited to missionary work by William H. Dunwoody, another Philadelphian. Prior to the early '80's the little American flour sold in Europe had been handled by exporters who resacked and rebranded it. It was therefore seldom uniform in quality; importers had no way of knowing what kind of American flour they were purchasing. Results had not been satisfactory, and British buyers were unusually conservative.

Creating Foreign Outlets

General Washburn's mills were so large that he needed a foreign outlet. After trying vainly to interest other Minneapolis millers in sending a general selling agent to Europe, he sent Mr. Dunwoody over individually. The Yankee sales missionary encountered many difficulties. A simple, smooth-working system of financing flour exports, through which buyer, seller, and banker were protected, had not been developed. The British millers were producing a dark, inferior quality of flour, but they held a practical monopoly of their market and naturally fought the man from Minneapolis.

Forced out of London, Mr. Dunwoody made his first sale to a reputable firm in Glasgow. The prestige of this sale gave him business with importers in Ireland. Minneapolis hard-wheat white flour, resold to British and Irish bakers, soon created such a demand that the missionary returned to Minneapolis victorious. Business with Europe increased enormously.

While the Northern hard-wheat growers were doing so well in Europe a group of Mennonites introduced to the Kansas soft-wheat belt a variety of hard red winter wheat which originated, probably, on the Russian steppes. This wheat soon became a success agriculturally and commercially. Kansas and adjoining states turned from soft to hard wheat-raising. From 1900 to 1920 the Southwestern hard red winter wheat industry expanded, until now about a third of our wheat acreage is in "hard red." Another third is in soft winter wheat.

Postwar Mergers

Soft winter wheat growers of the Central and adjoining states have found a new market in the biscuit, cracker, and pastry trade. There has been no increase in per capita demand for wheat flour during the past fifty years in America, but the demand has kept pace with population.

Entry of the United States into the World War violently interrupted the natural tendency of our milling industry to centralize. For a brief period hundreds of small flour mills were put into production.

Herbert Hoover, then the Food Administrator, appointed James Stroud Bell's son, James F. Bell, chairman of his Milling Division.

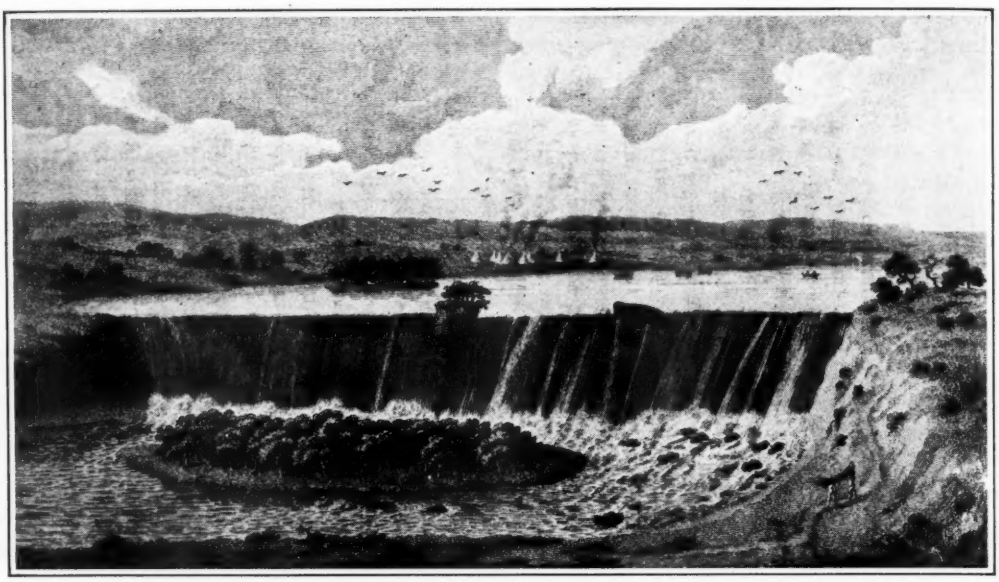
The situation outlined by Mr. Hoover called for production of the largest possible quantity of American flour to feed the military and naval forces and civil population of the allied countries.

To avoid profiteering, all flour mills were licensed and permitted a fixed maximum of profit, their books being audited by government accountants. Though this profit was small every mill capable of turning out a barrel of acceptable flour got busy.

When postwar conditions returned to normal, the smaller mills reverted to idleness. Centralization of milling capacity was resumed. Economically unfit mills were gradually eliminated. Accentuating this movement was the centralization of flour buying. During the past forty years household baking has decreased in volume, while bakery business has increased until bakers buy more than a third of the flour sold in the United States.

Extensive amalgamations of baking companies have reduced the number of buyers in the flour market. This consequent centralization of flour buying for the baking industry had stimulated a similar tendency among millers, further handicapping the smaller miller.

To the layman, 88,000 barrels a day—the maximum capacity of the largest group of mills under one corporate ownership in the world—may sound like an



To-day's milling center in 1766, as sketched by the explorer, Captain J. Carver, with this note: "The Falls of St. Anthony in the River Mississippi, near 2,400 miles from its entrance into the Gulf of Mexico. Height of the falls, 30 feet perpendicular. Breadth near 600 feet."

enormous amount of flour, but it is only a fraction measured by the total product of the mills of the country. If this group could be operated at full blast for three hundred days a year it would produce slightly more than 26,000,000 barrels per annum. The total production of the mills of the United States exceeds 120,000,000 barrels, and the number of merchant mills in active and vigorous competition is more than 2,600.

The public is not interested in the figures of flour production except as they concern the possibility of the creation of a trust in the production of a prime food requirement. This country fully realizes the necessity of using large means to accomplish large results, and supplying the bread of its population is a large undertaking.

Considering the formation of corporations of this size, the public is rightly concerned, however, in determining whether such growths are malign or beneficent—a legitimate and natural development of trade conditions and trends, or an attempt to establish a monopoly which will react upon the consumer in forcing up the price of the food he eats.

The largest of our milling companies disclaims any intention to control the price of flour through its ability to manufacture in large quantities, nor does it count for its future success upon being able to get a higher price than is dictated and controlled by competition.

Large-scale Economies

That it shall make a fair profit from its operations is, of course, essential to its continued existence. This it expects to earn by the practice of economies in mass production—by the reduction of overhead charges and the elimination of waste in administration, manufacturing, and merchandising.

In outlining the development of our milling industry, marking the apotheosis of the old grist mill with its slow-moving millstones, its overshot wheel, and its idyllic surroundings I have cited the circumstances under which one of the oldest and largest milling companies progressively met conditions by modernizing. But other concerns in the same field have felt the necessity for broader, centrally controlled operations. They too have felt the need of modernizing.

From 226 pounds per capita consumption of wheat flour in 1879 to 171.5 in 1927 is a decrease which must be reckoned with, especially when manufacturing profits have decreased from dollars to cents per barrel and national output for the year ending last June was 800,000 barrels larger than for the previous year—the largest since the record-breaking wartime period of 1918–20.

Logic of Unified Control

As this production is more than the domestic market requires, increasing attention is paid to exports. Europe leads in export demand for American wheat flour. The Netherlands is the largest European consumer, with Great Britain holding second place though the latter purchased 1,438,000 barrels in 1927 as compared with 1,210,000 two years before.

By intensively cultivating foreign markets American merchant millers now ship about eighty-five million dollars' worth of flour to Europe, South America, Asia, Oceania, and Africa annually. In spite of this outlet, flour prices during the past year have ranged down to $5.50 a barrel. In 1926 the variation was from $9.85 to $7.37; in 1925 from $10.20 to $8.25. As American merchant millers must operate on narrow margins, the freight rate on raw material to the mills and on finished flour to the markets becomes a decidedly important item.

Hence it seems more than ever necessary that millers should have a strong degree of unified, centralized organization and movement; the many must work and serve as one in order to be effective. And exactly that is happening in the industry to-day.

Does Your City Buy Enough Health?

Does your city pay enough to get a competent man to accept the vitally important post of full-time Health Officer? Is your Health Department on duty all day and every day? Can you protect your own health and that of your family in a city which buys only part-time health-protection for its citizens?

HEALTH records show that cities which have able Health Departments and able Health Officers, and that counties with adequate health units, have lowered their death-rates and saved millions of dollars in reducing costs attendant upon unnecessary illness.

Does your own city employ the available scientific methods of preventing the spread of communicable diseases?

Does it inspect and protect milk, regulate health conditions in schools and factories? Does it support health centers which demonstrate educational measures for disease prevention and personal hygiene?

If you live in a city which does not have the full benefit of all modern precautions, you can do a great service by finding out all that should be done and bringing such influence to bear as is necessary to make health conditions in your city what they ought to be.

Your Board of Health and your Health Commissioner may need additional ordinances and appropriations in order to expand their work. Remember — they cannot work without tools! Back them up.

A digest of an Annual Report of the Board of Health in a city of 31,000 inhabitants which has an enviable health record will be sent to you without charge. With the report also will be sent a complete set of the Health Ordinances which should be in force in every properly governed city. Address Booklet Dept. 230-Z.

METROPOLITAN LIFE INSURANCE COMPANY
FREDERICK H. ECKER, PRESIDENT — ONE MADISON AVE., NEW YORK, N. Y.

What is the short, sure way to more profits in New York?

Not just more *sales,* for beyond a certain point sales volume too often increases only at a prohibitive cost. So wise sales managers ask, "How can we

—*first,* raise sales volume in the metropolitan area to our New York quota—6 or 8 or even 20% of all domestic sales?

—and *second,* keep costs down so that profits will grow as fast as sales—or faster?"

Hundreds of concerns have found the answer

"Let Bush Distribution Service receive our goods, store them and deliver them for us. Bush does it better than we can and at lower cost, sometimes 30% less, sometimes 50%"—that's the boiled-down ten years' judgment in this rich metropolitan market of several hundred concerns that sell successfully dozens of types and kinds of commodities. Not merely emergency and seasonal merchandise, expensive and bulky goods, long style lines, and machines that require special installation service—but also the low price, small-unit items that go into chain groceries and drug stores.

What about YOUR goods?

Besides cutting your costs, Bush Service will build prestige for your products—since retailers do like the goods that come promptly, as wanted, no delays, no mistakes, no damage. And you may find it possible to finance working capital for promotion in the metropolitan area through the use of Bush Negotiable Warehouse Receipts.

Get full details in the free booklet "More Profits in New York." When you write for it, specify briefly your products and your method of sale, and we will supplement the printed book with a Bush Service letter telling just how we can help your business to more profits in New York.

BUSH DISTRIBUTION SERVICE

Bush Terminal Company

100 Broad Street **New York, N. Y.**

Please mention this issue of World's Work

Pure Science

(*Continued from Page 50*)

star was white hot, changing, as it cooled, to yellow, then to red. But according to Russell's theory, when a star is first born it consists of a great quantity of gas and is red in color. It is called a Giant. It may not be very hot. As it grows older it contracts—because of the mutual attraction of its particles—and as a consequence grows hotter. Finally it becomes white hot. At this point the contraction continues but the heating stops, and it begins to grow colder. When it is red again, it is a small old star and not a large new one. It is then called a Dwarf.

If Russell's theory is true—the evidence is too technical to be given here—it means that twentieth-century astronomy has discovered newly born stars. Where did they come from? We do not know yet. But it is encouraging to know that even though our old earth may be growing colder and may finally perish, it does not necessarily mean that the universe itself is dying.

There are many other significant discoveries that date since the turn of the century, some of them harder to understand than the theories of Einstein. All are extremely interesting. Not one of them has yet led into a blind alley. Each one has opened the way to greater things. The thirty years through which we have just come have outshone any previous period in the history of science; the chances are that the next thirty will see wonders not yet dreamed of to-day.

General Mitchell

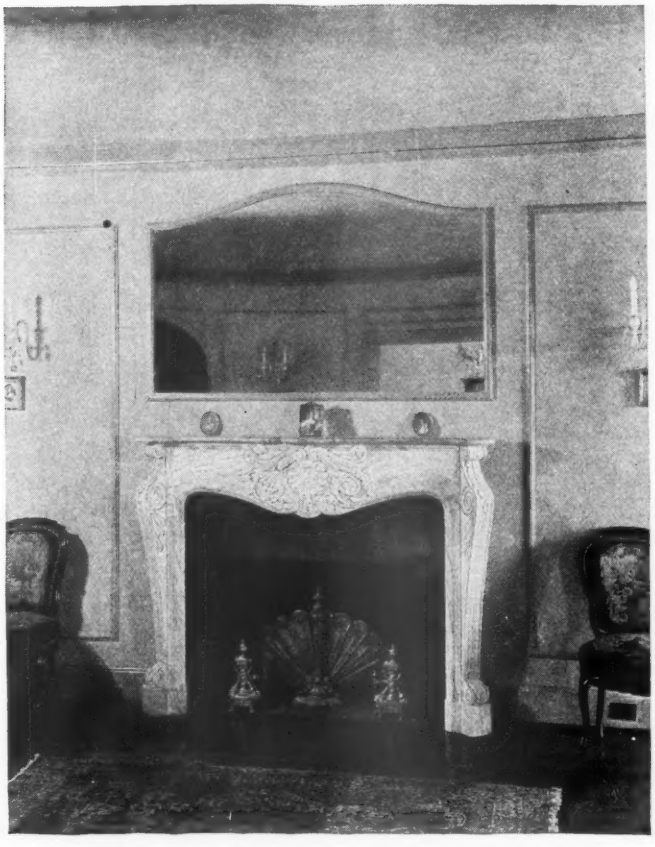
(*Continued from Page 71*)

Like almost everyone else, he believed the attorney generalship would then go to William J. Donovan, the assistant to the Attorney General and a staunch political supporter of President Hoover. He was confident that, in Colonel Donovan, the office would be in good hands. However, some two months prior to the inauguration of Mr. Hoover he heard his own name mentioned. He discouraged the talk, emphasizing anew that he was a Democrat, not a Republican. Besides, he truly wanted to resume private practice. But, as inauguration day approached, his appointment was urged by eminent lawyers and outstanding justices of the Supreme Court. Mr. Hoover made the formal tender. He was constrained to accept.

He was as fearful of political influence when he became Attorney General as he had been early in his service as Solicitor General. However, his fears have been dispelled, due to the eminently fair attitude that leaders of all political parties have assumed. They have sensed that his one dominant desire was to raise the Department of Justice to a higher plane than ever before—that the

(*Continued on Page 102*)

The Utility of Beauty



White marble mantel in Houston, Texas, residence.

BEAUTY as an integral part of everyday life is readily possible through the adaptability of marble in the various treatments of the average home.

To people of taste there is an incomparable atmosphere in the translucent surface of marble, with its varied veinings and almost limitless combinations of charming colorings.

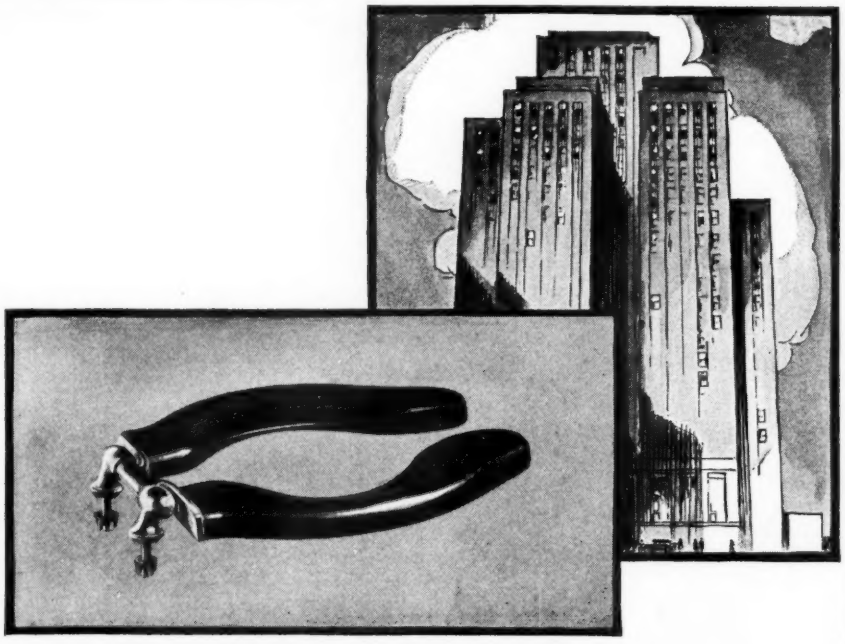
And yet, because of its extreme durability and its freedom from *upkeep* costs, as well as its very reasonable *initial* costs, marble is not only intensely practicable . . . . it is essentially economical!

There is No Substitute for Marble

We have recently published a series of books giving valuable facts and interesting suggestions about the use of marble in various buildings, including home and garden treatments.

Write us, naming the type of marble work you are interested in and a copy of the book covering that subject will be sent you immediately—without charge, of course. Address Department 2-Y.

NATIONAL ASSOCIATION *of* MARBLE DEALERS
ROCKEFELLER BUILDING · CLEVELAND, OHIO



"Why did the Clark and Jones Company move to the office building across the street?"

THE REAL REASON why office tenants so frequently seek new quarters is that the washrooms and toilets in the buildings they leave have become worn out and shabby. Business men appreciate that it is lack of courtesy to customers and employees to have toilets of this kind. Fortunately, these unpleasant conditions can be remedied easily and at little cost, simply by installing new Church Sani-Black Toilet Seats.

It is the ease with which they may be installed—and their inexpensiveness—which makes Church Sani-Black Seats a profitable investment in any building and puts the appearance of the toilet above reproach. All that is necessary is to throw out the old seats and replace them with the new, everdurable Church Sani-Black Seats which fit any make of bowl. They are sanitary, clean, guaranteed to last for the life of the building.

Neat, clean and modern toilets do not only help induce old tenants to stay—they give the building a higher rental value and make it easier to find new tenants. The owners of hundreds of office buildings have profited in dollars and cents by installing Church Toilet Seats.

Are you sure that your tenants are entirely satisfied with their quarters? If not it may pay you to send for the illustrated booklet which we have prepared. It describes our full line of Sani-Black Seats for office and public buildings. C. F. Church Manufacturing Company, Holyoke, Massachusetts.

C. F. CHURCH MANUFACTURING CO., Dept. W-2, Holyoke, Mass.
Gentlemen: Please send me the illustrated catalog describing Church Sani-Black Seats for (state kind of building)_____
*Name*_____
*Address*_____
*City*_____ *State*_____

CHURCH *sani*-SEATS

"TOILET SEATS FOR BETTER BUILDINGS"

(*Continued from Page 100*)

only partisanship he recognized was that appointments were supposed to go to the dominant party, that he would respect the custom if good men were presented and would not respect it if the men did not come up to the necessary standards.

Both as Solicitor General and Attorney General, Colonel Mitchell has been a most laborious worker, possessing to an unusual degree the power of concentration upon the task at hand and the ability to grasp quickly the fundamental elements of intricate legal problems. Opportunism has always been a dominating motive with most public men, but little or none of it is to be discerned in him. He has won the reputation of being not only an able lawyer but one upon whose fairness the courts can always depend.

Although he refrains at all times from the theatrical or dramatic, confining himself almost entirely to the appeal to reason, he has accomplished much for the government since coming to Washington. He gives promise of accomplishing a great deal more before he returns to the private practice which he left so unexpectedly five short years ago, when public service called.

The Romance of Excavation

(*Continued from Page 67*)

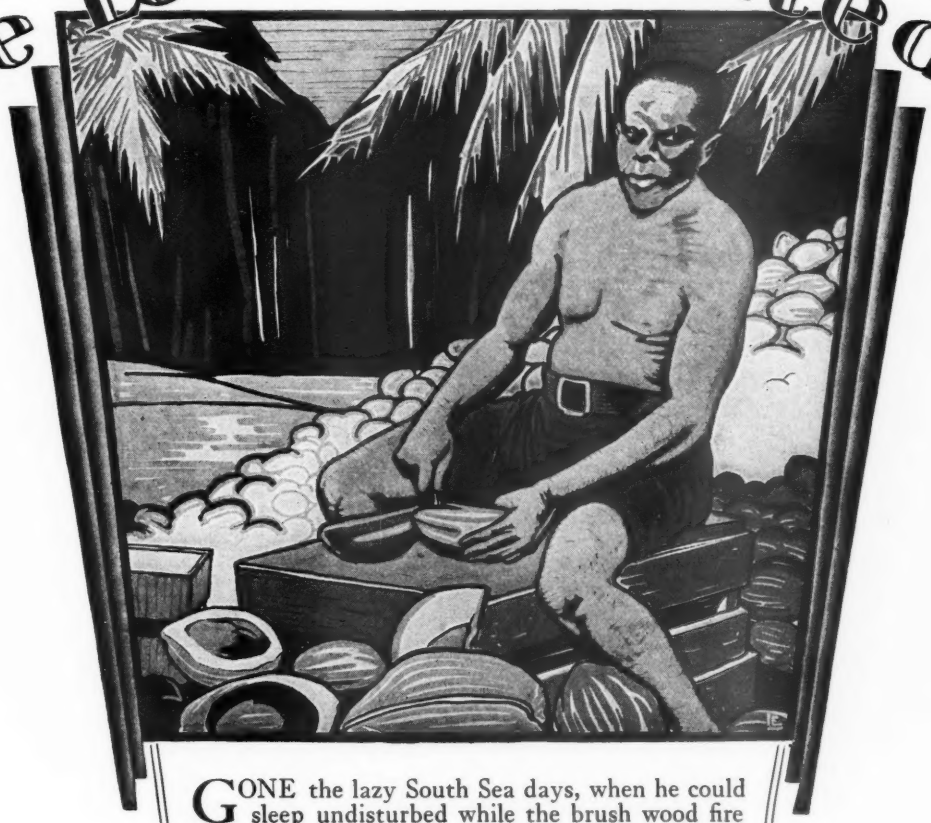
thunder. Then suddenly they made a rush to pass me and get out of the tunnel. Instantly I was covered from head to foot with them; they clung to my clothes and my hair, squeaking and flapping and so evil smelling that it was hours before I could get the stench of them out of my nostrils.

In early times, centuries before the famous Valley was used as the royal necropolis, the Pharaohs used to be buried in pyramids; but every one of the many sepulchers of this kind belonging to a crowned head have been picked clean by the thieves of ancient days, and the burial chambers are now empty. Some forty years ago, however, Monsieur de Morgan had the good fortune to chance upon a mass of gorgeous jewelry of untold value concealed in a secret place in one of the passages within the small pyramid of a princess of the Twelfth Dynasty; and the following season he made a second discovery of much the same kind. These jewels are now to be seen in the Cairo Museum, where they form the great rival attraction to the jewelry found in the tomb of Tutankhamen.

Hoards of jewelry or plate often come to light in Egypt, and the jewel room in the Cairo Museum contains a collection of absolutely fabulous value, the bulk of which has been provided by

(*Continued on Page 106*)

Pae Lo is irritated!



GONE the lazy South Sea days, when he could sleep undisturbed while the brush wood fire under the copra drying pans slowly grayed to ashes. Gone too, the quick activity of getting the fire blazing brightly before the boss overseer returned.

For the overseer has installed a "black box" that unerringly tells him just when the fire has been going and how hotly it has been kept blazing. And Pae Lo's lazy life is over. And Pae Lo is irritated!

The ever watchful "black box" is a Tycos recording thermometer. As it speeds up production and improves the product in the far off South Seas, so it functions in the highly efficient activities of thousands of plants in America.

Tycos instruments for indicating, recording and controlling temperature, pressure and humidity are widely and favorably known throughout the world. Tycos fever thermometers and diagnostic equipment are used by exacting physicians and hospitals everywhere. Tycos thermometers and meteorological instruments are faithfully keeping watch of weather conditions in every clime. Tycos service and quality are world wide.

In the Rubber Industry—Packing and Canning—Bakeries—Textile Mills—Candy Factories—Refrigeration Plants—Annealing and Baking Operations—on and on indefinitely the list of applications of Tycos Temperature Instruments extends.

If you are a manufacturer, let us tell you what we are doing for firms in allied lines. If you are interested in scientific instruments for home or laboratory, we will send a carefully selected list of literature for your use. Write us today.

Taylor Instrument Companies

ROCHESTER, N. Y., U. S. A.

CANADIAN PLANT, TYCOS BUILDING, TORONTO

MANUFACTURING DISTRIBUTORS IN GREAT BRITAIN

SHORT & MASON, LTD., LONDON

THE ~ SIXTH ~ SENSE ~ OF ~ INDUSTRY

Tycos Temperature Instruments

INDICATING ~ RECORDING ~ CONTROLLING

. a free service *for our Readers*

•

BUSINESS ORGANIZATION BUREAU *of* World's Work

E. R. Singer, *Director*

•

WORLD'S WORK readers will find the advertising pages both interesting and useful. As an additional feature the Business Organization Bureau invites requests for information and suggestions helpful in the solution of the many administrative problems continuously facing to-day's executive, and will arrange to have our readers supplied with literature dealing with their particular case. No charge is made for this service.

Kindly inform us ON YOUR BUSINESS LETTERHEAD as to the particular problem you are interested in, and mail to E. R. Singer, Director, Business Organization Bureau of WORLD'S WORK, 244 Madison Avenue, New York City.

FINANCE AND OFFICE MANAGEMENT

A. Equipment

- ☐ Addressing
- ☐ Automatic Typewriting
- ☐ Check Writing
- ☐ Dictating and Transcribing
- ☐ Duplicating
- ☐ Executive Office Suites (Period Furniture)
- ☐ Fire Resistive Safes
- ☐ Floor Coverings
- ☐ Folding (Circulars, letters, etc).
- ☐ General Accounting
- ☐ Inter-communicating Systems (Internal Telephones)
- ☐ Lighting Facilities
- ☐ Mail Dispatching
- ☐ Material, Stores Accounting and Inventories

Mechanical Bookkeeping Equipment

- ☐ Cards
- ☐ Indexes
- ☐ Trays
- ☐ Multiple Copy Writing

Office Furniture

- ☐ Aluminum (Chairs)
- ☐ Steel
- ☐ Wood
- ☐ Office Printing
- ☐ Office Records and Filing
- ☐ Office Ventilating

Papers for Office Use

- ☐ Bond Paper
- ☐ Ledger Paper
- ☐ Lightweight Stationery for Air Mail
- ☐ Printed Forms
- ☐ Safety Paper for Checks
- ☐ Payroll and Cost Distribution
- ☐ Public Utilities Accounting
- ☐ Sales and Expense Analysis

Sectional and Movable Office Partitions

- ☐ Steel
- ☐ Wood
- ☐ Sound Absorption
- ☐ Statistical Figure Work

Steel Storage Equipment

- ☐ Cabinets
- ☐ Lockers
- ☐ Shelving
- ☐ Tabulating
- ☐ Telegraphic Typewriters
- ☐ Time Recording
- ☐ Traffic and Transportation Accounting
- ☐ Visible Records

B. Services

- ☐ Analysis of Record Keeping Problems and Indexing
- ☐ Appraisal Services
- ☐ Budget Control
- ☐ Business Reports
- ☐ Business Training Institutions
- ☐ Cost Accounting Methods
- ☐ Financing Facilities
- ☐ Financial and Business Condition Services
- ☐ Floor Layouts
- ☐ Income Tax Reports
- ☐ Industrial Wage Plans
- ☐ Statistical Service

INDUSTRIAL (Production and Distribution)

- ☐ Air Conditioning
- ☐ Automatic Sprinkler Systems
- ☐ Brass Pipe

Building Materials and Products

- ☐ Brick
- ☐ Bronze
- ☐ Cement
- ☐ Fibre Products
- ☐ Limestone
- ☐ Locks and Hardware
- ☐ Marble
- ☐ Steel
- ☐ Tiling
- ☐ Vitreous Products
- ☐ Wood
- ☐ Wrought Iron
- ☐ Building Service (Designing, Engineering, Construction and Equipment)
- ☐ Cast Iron Pipe
- ☐ Copper Pipe
- ☐ Cost Reduction Engineers
- ☐ Electric Fans
- ☐ Equipment for Power Generation and Transmission — External
- ☐ Especially Designed Production Machines
- ☐ Insulating Materials
- ☐ Lighting Facilities
- ☐ Management Engineers (Public Utilities Operation)

Material Handling Equipment

- ☐ Conveyors
- ☐ Cranes
- ☐ Trucks
- ☐ Metal Protection on Buildings (External Coating)
- ☐ Motor and Generator Designing and Building
- ☐ Packaging Machinery
- ☐ Physical Distribution (N. Y. Area and Abroad)
- ☐ Piping Products

Plant Maintenance

- ☐ Cleaning Materials
- ☐ Fire Prevention and Protection Engineering
- ☐ Floor Cleaning Devices
- ☐ Lubrication
- ☐ Paint Sanitation
- ☐ Smoke and Combustion Problems
- ☐ Wire Fencing

Power Distribution—Internal

- ☐ Bearings
- ☐ Belts
- ☐ Chains
- ☐ Power Distribution Instruments — Internal (Transformers)
- ☐ Pressed Steel Products
- ☐ Pumping Machinery
- ☐ Refractory Materials
- ☐ Siding and Roofing Materials
- ☐ Stamped Metal Parts
- ☐ Steel Shelving for Stock or Storeroom
- ☐ Temperature Control (Installations)
- ☐ Temperature Control (Instruments)
- ☐ Transportation (Motor Trucks)
- ☐ Ventilating Equipment
- ☐ Water Softeners

Wrapping and Shipping Materials

- ☐ Corrugated Fibre
- ☐ Paper
- ☐ Wood Crating
- ☐ Wrought Iron Pipe

INSURANCE

A. Casualty Insurance

- ☐ Accident and Health
- ☐ Automobile (All Forms)
- ☐ Burglary and Theft
- ☐ Fidelity and Surety
- ☐ Liability (All Forms)
- ☐ Plate Glass
- ☐ Parcels Post
- ☐ Property Damage
- ☐ Workmen's Compensation

B. Fire

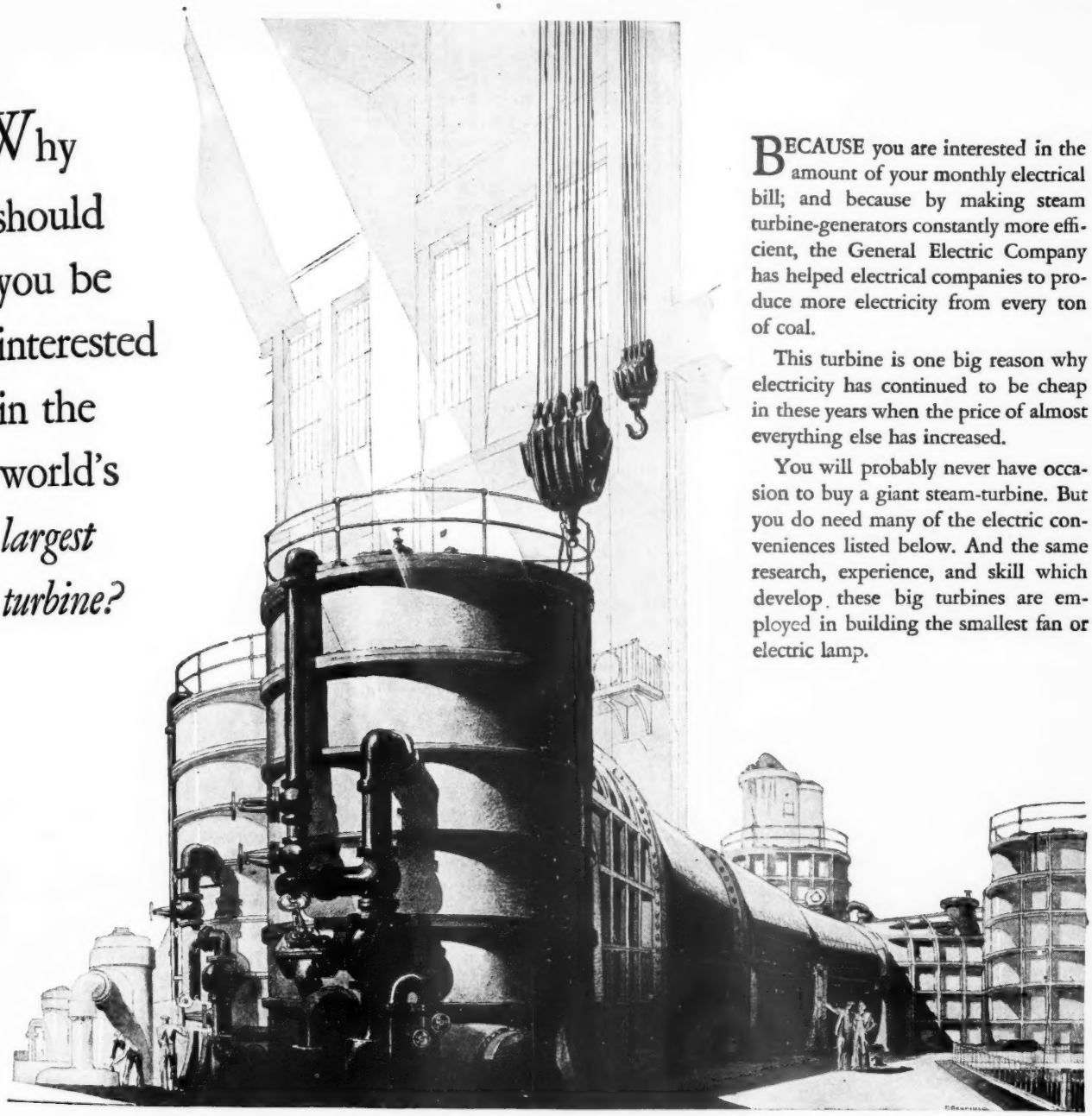
C. Life

- ☐ Annuities
- ☐ Group Insurance
- ☐ Health and Accident

EMPLOYEE'S RELATIONS

- ☐ Bonus Plans
- ☐ Employees' Compensation
- ☐ Group Insurance
- ☐ Home Building Loans

Why should you be interested in the world's *largest turbine?*



BECAUSE you are interested in the amount of your monthly electrical bill; and because by making steam turbine-generators constantly more efficient, the General Electric Company has helped electrical companies to produce more electricity from every ton of coal.

This turbine is one big reason why electricity has continued to be cheap in these years when the price of almost everything else has increased.

You will probably never have occasion to buy a giant steam-turbine. But you do need many of the electric conveniences listed below. And the same research, experience, and skill which develop these big turbines are employed in building the smallest fan or electric lamp.

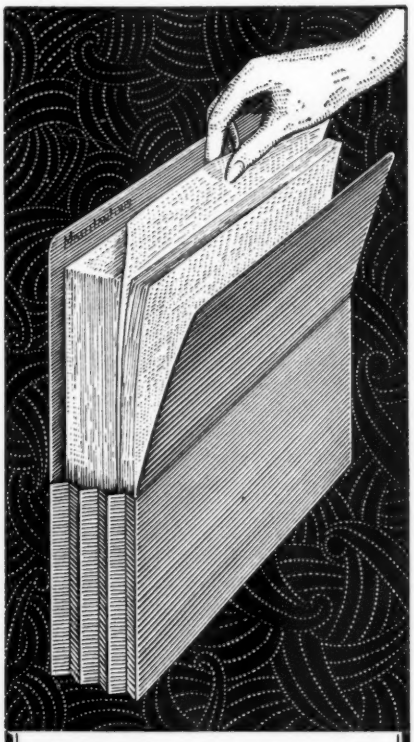
FOR THE HOME—General Electric and its associated companies manufacture a complete line of electric products and appliances, including G-E MAZDA and G-E Edison MAZDA lamps, G-E refrigerators, G-E fans, G-E and Premier vacuum cleaners, G-E wiring systems, Edison Hotpoint ranges, percolators, toasters, and other Hotpoint products, Thor washers and ironers, and Telechron electric clocks.

FOR INDUSTRY—Several thousand electric products and appliances, including generating and distributing apparatus, motors, electric heating apparatus, street lights, floodlights, traffic lights, airport lights, Cooper Hewitt lights, Victor X-ray apparatus, motion-picture apparatus, Carboloy cutting tools, electric locomotives and equipment, and street-railway equipment.

JOIN US IN THE GENERAL ELECTRIC HOUR, BROADCAST EVERY SATURDAY AT 9 P.M., E.S.T. ON A NATION-WIDE N.B.C. NETWORK

95-727H

GENERAL ELECTRIC



Vertex
VERTICAL-EXPANDING
FILE POCKETS

are firm, durable, expansible filing containers that can be used in any vertical filing system.

They never slump down in the file drawer, but stand erect with the index tab always in plain view; hold three or three hundred letters with equal facility, are easy to remove or replace in the file, hold small papers as well as large with never a chance that they will become lost or misfiled; save time in daily filing and finding papers; improve instantly the efficiency and appearance of the drawer.

Ordinary flat folders lack all of these advantages. They were never intended to contain many papers or for continued use. Your own files will show the need of something better for your heavier correspondence.

You will know what real filing satisfaction is the minute you install "Vertex" File Pockets to replace the bulkiest of your present folders. *Use the coupon for a free "Vertex" File Pocket.*

CUT HERE

Please send me for trial in my files a free sample of Bushnell's Paperoid "Vertex" File Pocket, as described in February World's Work.

Name of Firm.....

Address.....

Name and Position of Person Inquiring.....

.....

Letter Size or Legal Size Desired?.....

To ALVAH BUSHNELL CO.
Dept. W.
13th & Wood Streets Philadelphia, Pa.

(*Continued from Page 102*)

legitimate excavation, but a considerable portion by chance finds For example, a splendid group of jewels and gold and silver vases was discovered by a native in the ruins of Bubastis, the modern Zagazig. He was riding his donkey along the path which wound its way across this site—between fallen columns, old walls, and mounds of débris—when the animal tripped and flung its rider head-first into a heap of loose earth, from which he emerged, to his astonishment, with a golden bracelet in one hand and a silver pot in the other.

The story of the great discoveries in Egypt is one of extraordinary variety, and it will perhaps give the reader some idea of the surprises which are to be anticipated if I mention briefly a few more of those which have rewarded the excavators' labors in the past.

At the beginning of this century Monsieur Legrain, who was digging in the temple of Karnak, near Luxor, chanced upon a kind of dump heap of statues, and one by one some of the most important sculptures now in the Cairo Museum were disinterred during the ensuing months. Many years previously Monsieur Mariette discovered a deep well in the Temple of the Sphinx, which had been used as a similar dump; and from it, among many other figures, came the famous statue of Khephren, one of the great masterpieces of the ancient world. A short distance from here Dr. Reisner, the American savant, hit upon a wonderful collection of statues in the temple of the Third Pyramid, some of which are now to be seen at Boston.

Just before the war German excavators, working at El Amarna, uncovered the studio of a royal sculptor of the time of Akhnaton; and the mass of material there found included the much-photographed head of Queen Nefertiti, now in Berlin. In this vicinity, half a century ago, some natives chanced upon the correspondence files of the foreign office of the same reign; and this great collection of letters has thrown a flood of light upon the history of the period.

During my first years in Egypt I used to see a great deal of Dr. Grenfell and Dr. Hunt, the two Oxford scholars whose work has become so justly famous.

They had found that the coffins of the Greek period were made of a sort of papier-mâché consisting of scraps of paper—the contents of the waste-baskets of the town. By disintegrating these coffins and piecing together the torn-up fragments of paper they were able to present to the world volume after volume of private letters, documents, and literary fragments of tremendous interest, including seven new

(*Continued on Page 108*)

5th and LAST

IS there any logic that can keep more and more makers of furniture, hardware and weavers of upholstery materials from locating here?

For the active Piedmont Carolinas' furniture industry, fifth in the Nation, is still importing the bulk of its upholstery fabrics, varnishes, and finishes, and *all* of its hardware.

Only three years ago there was *no* local source of supply for tapestries, velours, brocades and other fabrics used by the furniture industry.

Today, those factories that have been established here have made exceptional progress. There is still room for many more. They *do not have to hunt for a market.*

As to the making of hardware, the field is still completely open. Yet every factor that favors success exists right here.

Why not know? The facts are here for you in this book—"*Piedmont Carolinas.*"

Address Industrial Dept., Rm. 235, Mercantile Building, Charlotte, N. C. *Write.*

DUKE POWER COMPANY

SOUTHERN PUBLIC UTILITIES COMPANY AND OTHER ALLIED INTERESTS

A *finger on every department* of your business

A system of day-to-day control that keeps you posted on every trend

THE busy-looking office . . . the busy-looking factory . . . enthusiastic verbal reports from department heads—none of these necessarily mean that business is making profits.

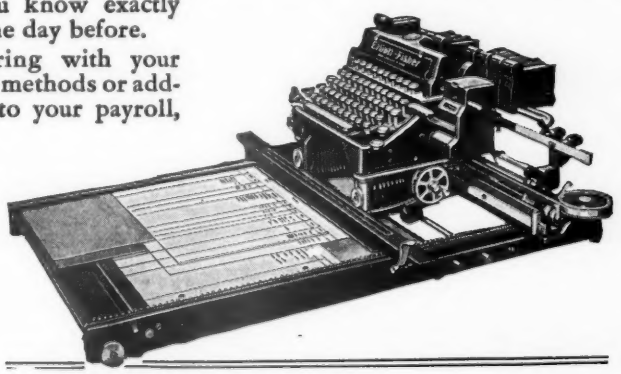
No matter how prosperous the scenery may look, it is the cold, hard figures from every department—compiled every day—that tell the true story of your trend.

When an executive has all the vital facts and figures before him, posted up-to-date each day, he has his fingers on the safest index upon which to base decisions and to chart future operations.

Elliott-Fisher enables you to base decisions on information that is right up to the minute. The records of every department are compiled every day and summarized in a simple, concise report. This is placed on your desk every morning, and even before you open your morning mail, you know exactly where you stood the day before.

Without interfering with your present accounting methods or adding a single man to your payroll, Elliott-Fisher combines many operations into a simple, unified plan of control. Thousands of executives depend on Elliott-Fisher.

We should like to tell you about the part that Elliott-Fisher fact-finding machinery plays in the successful management of many well-known firms. Let us send you full information. Use the coupon below.



The Elliott-Fisher flat surface accounting-writing machine

Elliott-Fisher

Flat Surface Accounting-Writing Machines

GENERAL OFFICE EQUIPMENT CORPORATION

Division of Underwood Elliott Fisher Company

342 Madison Avenue, New York City

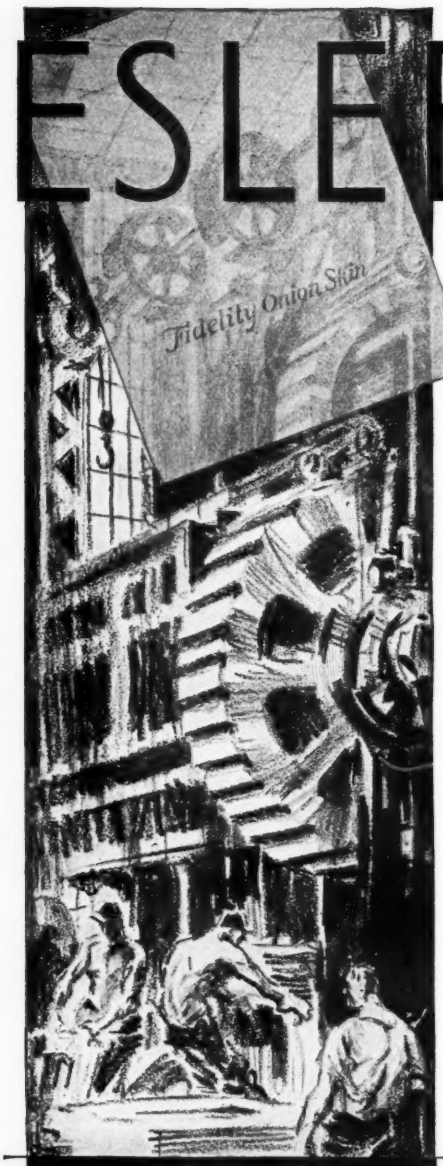
"Underwood, Elliott-Fisher, Sundstrand, Speed the World's Business"

General Office Equipment Corporation
342 Madison Avenue, New York City

Gentlemen: Kindly tell me how Elliott-Fisher can give me closer control of my business.

Name_____

Address_____



ESLEECK

THIN PAPERS

IN INDUSTRY

—their superb qualities have made them the standard for the records and forms of modern business.

That thin, tough, durable paper that can be made from new, clean rags only. They really cost less—print better and last much longer. Always specify them.

THE BEST PAPERS ARE MADE FROM RAGS

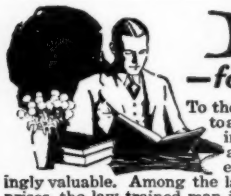
FIDELITY ONION SKIN

SUPERIOR MANIFOLD

EMCO ONION SKIN

ESLEECK Manufacturing Co. Turners Falls, Mass.

No library complete without Kipling complete



LAW

—for Larger Success in BUSINESS

To the man who would rise to a commanding position in business, a sound and practical knowledge of Law is exceedingly valuable. Among the larger business enterprises, the law-trained man is often preferred for the higher executive positions. Many great corporations—the U. S. Steel Corp., for example, the C. B. & Q. R. R., the International Paper Co., the National Biscuit Co., the Mutual Life Insurance Co, the Standard Oil Co. of Indiana, the Packard Motor Car Co., the American Sugar Refining Co.—are headed by men of legal training. In the smaller corporations or in one's own business, a knowledge of law spells larger success. For the whole intricate structure of business is based on LAW.

"In looking over the field," writes a prominent Eastern manufacturer, "I find that nearly all the positions commanding a salary of $10,000 or more are filled by men who have studied law." Fit yourself at home, in your spare time, for larger success in business. Full law course leading to degree of LL.B., or shorter Business Law course. LaSalle will guide you step by step. We furnish all text material, including 14-volume Law Library. Low cost, easy terms. Get our valuable 64-page "Law Guide" and "Evidence" books free. Send for them now.

LASALLE EXTENSION UNIVERSITY, Dept. 2332-L, CHICAGO

The World's Largest Business Training Institution

(*Continued from Page 106*)

sayings of Jesus Christ—part of a lost gospel. Dr. Grenfell's labors, alas, are now over; but Dr. Hunt is still continuing to work through the mass of material thus so curiously recovered from oblivion.

One day some French excavators who were working on the island of Elephantine, near the First Cataract, sent for me to come and "inspect" a discovery they had made. I was taken down into a subterranean chamber amid the ruins of the ancient city, and there in rows before me rested the embalmed and gilded bodies of the sacred rams of Elephantine, which in turn had been enshrined and worshiped in the adjoining temple as the incarnation of the god Khnum, and had finally been interred in this vault, one by one.

On another occasion Professor Schiaparelli, the Italian excavator, sent word that he had discovered an intact tomb in the Theban necropolis where he was working; and on going there I found the party grouped before an absolutely new-looking wooden door, locked and sealed, which barred the entrance to a tomb cut into the face of the cliff. It was very awe-inspiring to think that this door had remained thus locked for more than thirty-three centuries; and when the professor, for some reason which he could not afterward explain, solemnly knocked upon it three times, a curious thrill shot through my nerves as I pictured the dead man in the darkness beyond awaking at this summons and lying there listening.

We finally removed a panel with a fret saw and made our entrance. The tomb proved to be that of a nobleman named Huy, who had lived at the court of Queen Tiy; and the rich funeral furniture is now to be seen in the Turin Museum.

On the sandy floor of the sacred burial chamber we could distinctly see the footsteps of the last man to leave the tomb after the burial; and in a bronze dish near the door were some ashes of charcoal and incense, and the stick with which they were stirred—so untouched by the years that they seemed hardly yet cold. On a table near by were a roast duck, a few small loaves of bread, and some fruit, all perfectly preserved.

But what is a mere three thousand years? The excavation of the tombs of the kings of the First Dynasty was conducted by Professor Petrie in the year before I went out to work with him; and in handling the objects found I often experienced a sense of amazement at their seeming newness. I remember there was a toupee of hair, neatly curled at the fringe, which had belonged to one of Egypt's first queens. She lived five thousand years ago, but the permanent wave had not yet come out.

No. 5
of a series of actual cases from our files

Why a Fidelity Bond?

SHE was successful in business. Social position, plus her prominence in civic and in club circles were valuable assets for an Investment Trust officer. And her superiors placed implicit reliance in her character and ability.

But with a moderately increasing income came greatly increased demands for money, to maintain an unsuccessful husband and family on the high plane which social ambition and personal pride demanded.

Money was easily diverted from funds of the Trust, and with the realization that discovery was improbable, it became a habit. Not until nearly four years later did an audit disclose a shortage of $33,000. There was a Fidelity Bond, to be sure, for the nominal sum of $5,000, which left a loss of $28,000 to the Trust, the price of learning that wherever people handle money it must have *adequate* protection, regardless of *apparent* safety.

Write for our Booklet—"*What Is It and What of It*"
This insurance primer gives briefly the whys and wherefores of modern insurance. Your request will place you under no obligation—nor will a representative call unless you so specify

THE EMPLOYERS' GROUP

Practically every kind of Insurance except Life Insurance, including Fidelity and Surety Bonds

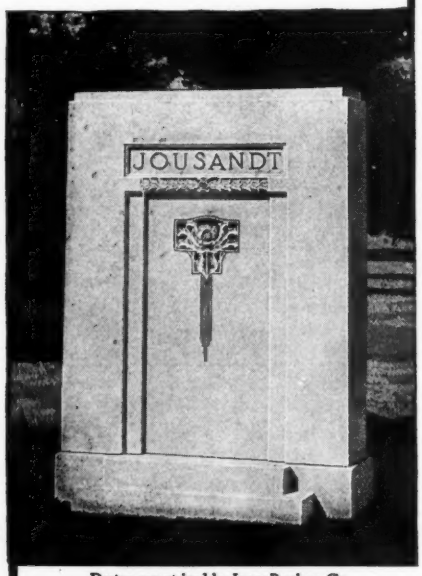
110 MILK STREET BOSTON, MASS.

AMERICAN EMPLOYERS' INSURANCE COMPANY

THE EMPLOYERS' FIRE INSURANCE COMPANY

THE EMPLOYERS' LIABILITY ASSURANCE CORPORATION, LTD.

What is there left to say, or do ...but this?



Design copyrighted by Jones Brothers Co.

A SILENCE is under the trees . . . a silence shared only by the quiet, lovely tribute that marks the resting place. Here is the final affirmation of your love.

Guardian Memorials are planned by competent artists . . . then carved by master craftsmen out of granite from the hills of Barre, Vermont. Guardian Memorials will always be beautiful. Centuries of storms, rain and sun will find exquisite contours unimpaired, inscriptions clear and firm. A Guarantee Bond is your protection. . . . And though Guardian Memorials are as fine as you can buy, their cost is moderate.

We shall be glad to send you a booklet, "To Mark the Place with Beauty Forever." *Guardian Memorials are distributed by reliable retail memorial dealers.*

THE JONES BROTHERS COMPANY, Inc.
Makers of Guardian Memorials
Dept. B-2, 10 High Street, Boston, Mass.
Please send me, without charge, a copy of the booklet: "To Mark the Place with Beauty Forever."

Name_____
Street_____
City_____ State_____

Registered trade-mark

GUARDIAN MEMORIALS
of Everlasting Beauty

Clemenceau

(*Continued from Page 75*)

That was no Capua, the point of land to which Clemenceau retired after his public life was ended. It jutted out into the raging ocean, an outpost of his native Vendée. He encountered much difficulty in assembling his little acre. Only one third of it, together with the original cottage, was he able to purchase outright. Another third, the beach, he leased from the French government; the remainder, a sand pile, which he converted into a wonderful flower garden, he rented from an old countess.

On the first of every month the countess, in a carriage and in a costume that were locally believed to have made their first appearance in 1824, at the coronation of Charles X, would arrive at the cottage on the strand and demand the rent money. "Of course, I give it to the Church, to which you have done such grievous wrong, Georges Clemenceau. Not for your sake, of course; not all the wealth of the Indies could make amends for what you have done. But I hope it will wipe out my own sin, that of allowing an infidel to live on the land my ancestors held as a fief of the Church. Don't you see, Georges Clemenceau, the greatness of our Lord—letting you, whatever you are, save France?"

"No, madame, it wasn't your Lord who saved France and you and me; it was the peasant, who became the *poilu*."

"Well, what are you anyhow, Georges Clemenceau?"

"Madam, I am your devoted slave."

Then the rent would be paid, and with a nosegay the countess would depart.

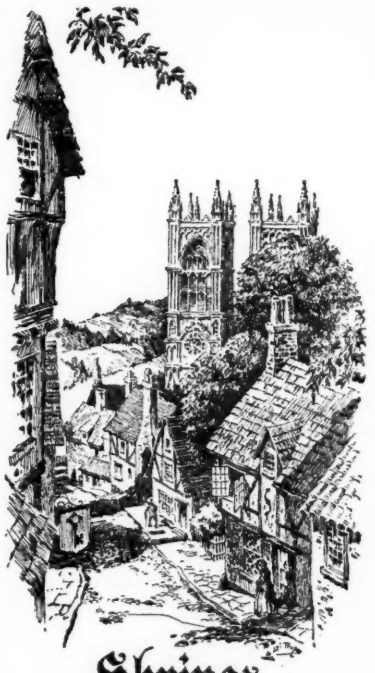
I saw the brave old man for the last time early in September. He was about to celebrate his eighty-ninth birthday. In the months that had passed since our last meeting he had aged perceptibly. One of his legs dragged just a tiny bit; but, as he said, tapping his forehead, "The noodle seems to be all right still." This was made quite clear when he began to read a chapter of his volume of reminiscences soon to appear in translation under the title, Memoirs of a Victory.

It was all direct and forthright and in his best style—trumpet notes followed by the clash of steel. But: "So-and-So wants me to say this. Monsieur X wants me to leave that out," he would mutter.

"Don't you let a voice speak in that volume but your own," I urged.

"Dear friend, be assured that I certainly shall not. But I shall write and rewrite that chapter to-morrow. I shall keep on writing and rewriting until the middle of October. Then I will correct the proofs, and then I will go. I will go, I hope, promptly. This disagreeable business of dying—I do not want to dawdle over that."

And in November he went, leaving a great emptiness behind him.



Shrines of England's History.

Begin with Exeter, with its white stones drenched in peace. Glastonbury Abbey lifts its broken arch above the grass in perpetual supplication. Beaulieu, founded by King John, standing like a white spectre in the fields. Exquisitely feminine Wells, a gothic sermon in stone. Winchester, where Edward the Confessor was hailed as king. Canterbury and its priceless relics of early Christianity, the tomb of the Black Prince, the shrine of Thomas a Beckett, and the very stone on which Henry II knelt in penance. Perfectly proportioned Salisbury. Tewkesbury Abbey, named the melancholy, and tragic Tintern, kneeling in a meadow of daisies like a saint at prayer, is an unforgettable sight. The evening sun now falls into the roofless church and the Chapter House is a woody dell with clusters of primroses and forget-me-nots.

There are many more of these glorious shrines—Chester, Hereford, Gloucester, and Worcester, each a gem of loveliness and interest that will lend fragrance to days ever afterward

Guide No. 58 has been specially prepared for American visitors and will be mailed free to you upon request

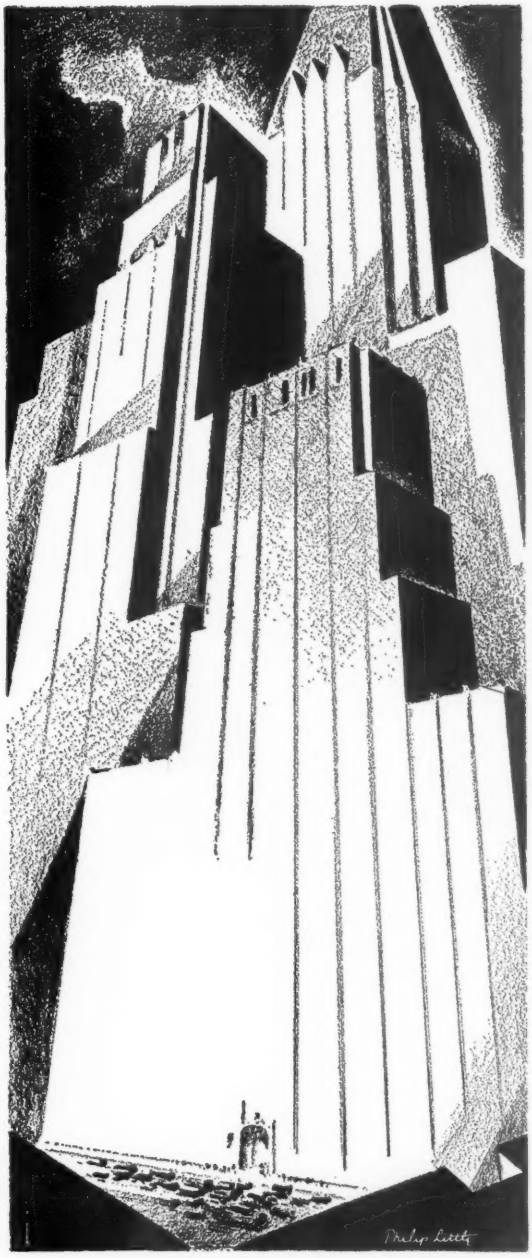
G. E. ORTON, *Gen. Agent*, 505 Fifth Ave. N.Y.

Great Western and Southern Railways of England.

WESTWARD

AGAINST THE PROPHETIC SKY

SAN FRANCISCO IS RISING TO A NEW HIGH PLACE IN THE SUN



TODAY more than ever San Francisco is a name that is fraught with promise. Out of a spirited, pioneer past there has come a present whose force is dynamic.

First city when the West was a fledgling, San Francisco has come to be headquarters for one of America's strongest sectors... but even tonight, today will join the past... and the city is thinking of what is to be.

From this city's seven hills, California stretches north and south and east to embrace the most concentrated population in the West. Within a radius of one hundred and fifty miles live half the people of California, while 1,600,000 people of more than average per capita wealth live within a radius of an hour's ride. And 11,000,000 people who live west of the Rocky Mountains can be served more quickly and cheaply from San Francisco than from any other city.

But there is another, greater market that fascinates these modern minds! 900,000,000 people in the lands bordering the Pacific are awakening to the wonder of the world's progression... demanding more and more of the things it has to give. And San Francisco is the natural gateway for the commerce that is going to modernize these millions.

The great deep-water bay, already second in the United States in the value of water-borne tonnage, is but one of the natural advantages San Francisco is counting on. An even, workable climate that speeds production throughout the year, is another. Center of a region rich in natural resources (one of which is economical *natural gas)* and served by three great transcontinental railroads, the city and the area about the Bay need never know a western manufacturing equal. Finally, this far-seeing city is headquarters for the leading financial, railroad, lumber, hydro-electric and distributing as well as manufacturing and shipping interests of the Pacific Coast... right now...

To the world-sung natural advantages this city owns—to these things that opportunity is built upon—San Francisco adds the splendid life that has made thousands who came first to visit return again to live.

Men of destiny are marking San Francisco's future *undeniable.* You should not miss the opportunity to see this city as it is today and to look upon the even greater city that is building—in all, to know this part of California's lure.

Californians Inc. is anxious to tell you more about San Francisco and the California that it centers. The coupon will bring two worthwhile illustrated books. Send for them... now!

CALIFORNIANS INC.
DEPT. 2902, 703 MARKET STREET
SAN FRANCISCO, CALIFORNIA

I want the books "California Vacations" and "Why Manufacturers Choose San Francisco."

Name.....

Address.....

SAN FRANCISCO

IN CALIFORNIA "WHERE LIFE IS BETTER"

MEDITERRANEAN SPRING RESORTS

By JAMES ALBERT WALES

YOU COULD land in an airplane at almost any of the Mediterranean resorts at almost any time of the year and, finding it delightful, would think, "This must be the season at this spot."

But the spring is the time to go, for then these places put on their best clothes and their best shows for the visitor. There is no better prelude to a later tour of central or northern Europe than to spend a few golden weeks, in March and April, on the shores and islands that are washed by the blue waters of this historic sea.

You can choose from among the many excellent cruises, or you can go on your own. In any event, if you take the smooth and sunny direct route from New York to Spain, keep a firm grip upon yourself when you land on Spanish soil, for you will find this romantic land so alluring that it is likely to wreck your itinerary right at the start. But don't miss the expositions at Seville and Barcelona, nor the Alhambra at Granada, if you haven't time for Madrid, Toledo, and Burgos.

If you land at Gibraltar, you will be tempted to buy an enormous quantity and variety of souvenirs and alleged antiques. Wait—for you will grow wiser the farther you go, and nowhere will you lack abundant opportunities to buy, buy, buy. You will find beggars everywhere except in the Balearic Islands.

Not far from the eastern coast of Spain are the Balearics, an isolated paradise, rivaling the Riviera in beauty and with the advantage of not being overrun by tourists. The inhabitants are the most leisurely and unperturbed people in the world, and many of them wear quaint native costumes (all the time, not merely on steamer day!). The older Majorcans believe the earth is flat. There are medieval castles, cathedrals, stalactite caves, fishing towns, and villages nestling among orange groves. In one of the small towns, all the streets are steps. The mountain scenery is superb. The soldiers are resplendent in comic-opera uniforms.

You might discover Marseille on your tour. You would learn that it is not merely one of the world's great ports but also one of its gayest cities. And then on to the Riviera, "playground of kings and adventurers."

Let it be said to the credit of the Riviera hotel men that they have seen the writing on the wall: this year will witness a marked abatement in the annoying tourist taxes and levies. Of course you will go to Nice and Monte Carlo. "*Faites vos jeux, messieurs.*" But don't miss the lovely little less-known places near them. Make your voyage one of discovery.

Villefranche, with its sentinel hills, guards fishing boats of red, yellow, blue, and green in a purple harbor. In the background stands Eze, and beyond are the towering Corniches. Cassis is the Venice of the Riviera, and Brignoles, a mountain hamlet among the Estérels, is the scenic gem of the Côte d'Azur. See Fréjus and Saint Raphaël, and exquisite Saint Paul du Var. A moonlight supper at the Columbe d'Or, atop the ramparts, is unforgettable. You'll see many celebrities here, too.

Near by are Antibes and Cap Ferrat, a smart bathing beach, and Juan-les-Pins, a most sophisticated *plage*. Hyères is another bathing place that must not be overlooked. You will remember some of these surprising spots longer than the better known "guidebook" towns.

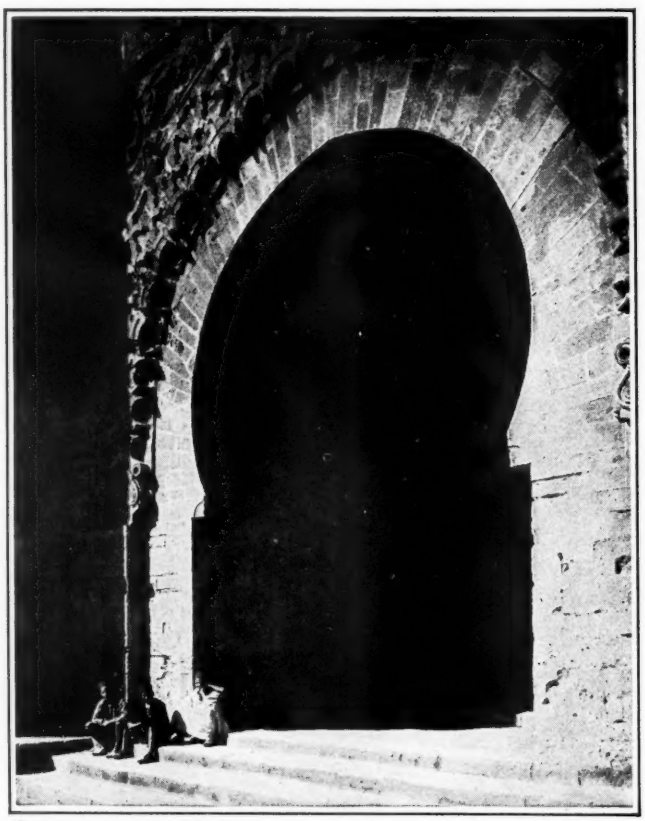
You should drive into Nice along the Grand Corniche, one of the finest of all motor highways, which descends behind Monaco, meets the Petite Corniche at Cap Martin, and crosses the border to Ventimiglia, unfolding a magnificent scenic panorama all the way. Then to San Remo, in the Italian Riviera.

But let us not overlook Corsica, before we leave French soil. Here is a bewitchingly beautiful island with a perfect climate. Comparatively few travelers know enough to visit Corsica—it pays to be one of them.

Everyone raves over Naples, and rightly. The Bay of Naples is a synonym for beauty. Beyond is Vesuvius, and near by are the ruins of Pompeii, as well as Posillipo and Baia. Capri, with its Blue Grotto, and Ischia and of course Sorrento are enchanting.

You can spend days, weeks, or months in Italy, and there is more to see and do in Florence, Venice, and Rome than can be described here. The Lido is always smart, chic, delightful. The Tower still leans at Pisa. But you will want to cross the Mediterranean to Phaleron, the port of Athens, and to see the famed Acropolis.

(*Continued on Page 114*)

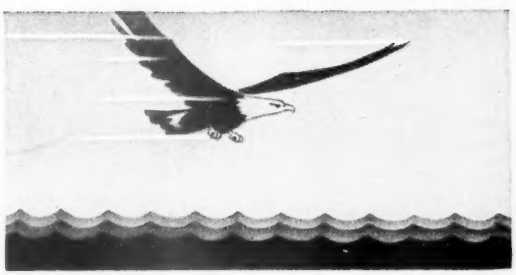


© PUBLISHERS PHOTO SERVICE

One of the beautiful Moorish arches in the city wall around Rabat, Morocco. Although not on the Mediterranean, Rabat is one of the most interesting cities of this fascinating country. It was founded in 1184—when Salli, close by, was already an ancient city. To the west of Rabat stand the ruins of Sala, once a prosperous Roman colony.

THE COMMAND AND CREW

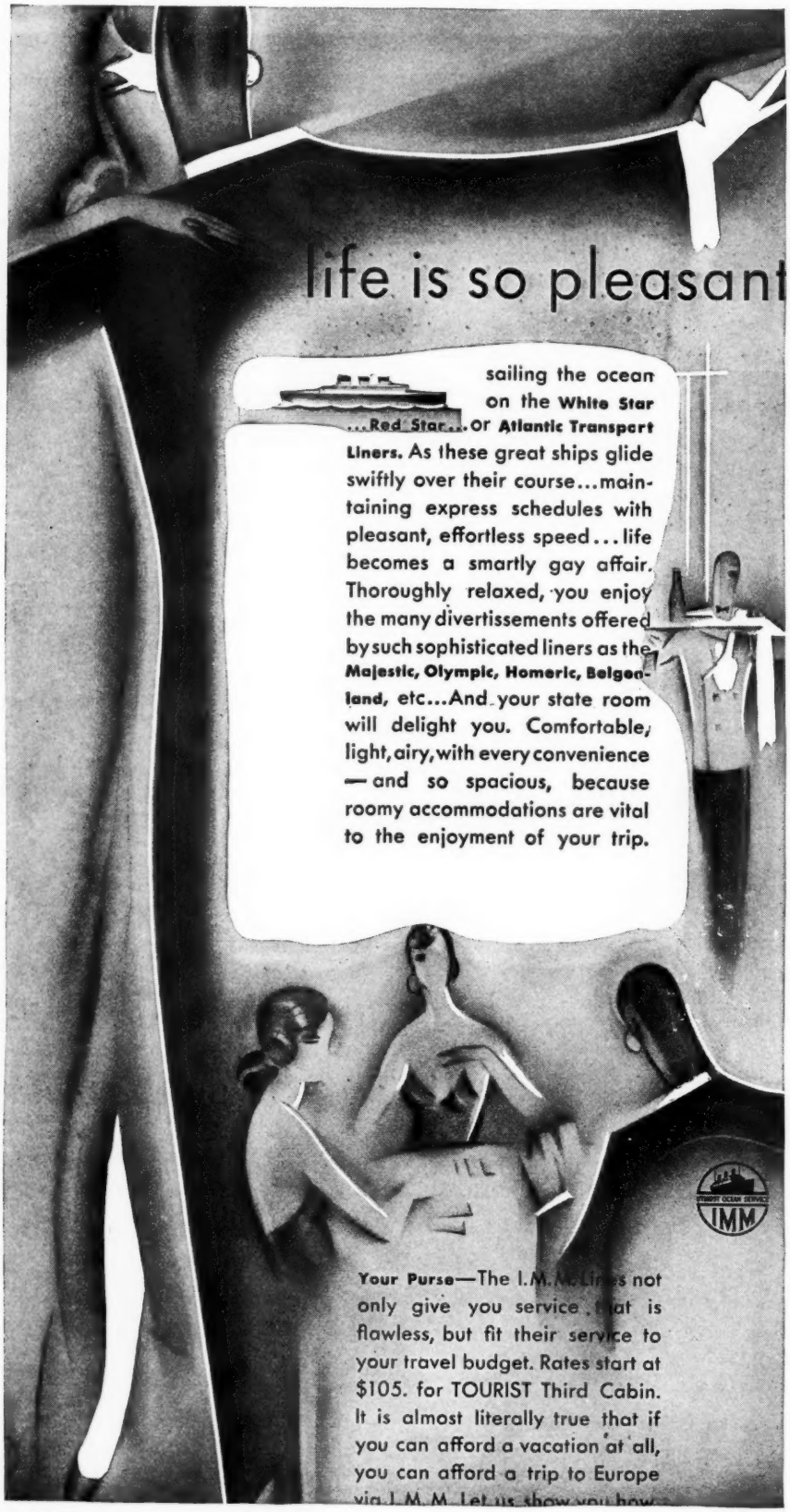
Personality! That human quality that enriches all contact between man and man . . . nowhere is it more vividly exemplified than in the command and crew of the United States Lines. Selected for command because of a seven-seas reputation for courage, leadership and resourcefulness. Chosen for service on deck, in salon or in cabin because of an inborn graciousness, civility and tolerance.



You'll sense the difference . . . be conscious of an unobtrusive spirit of highly talented service when you travel to Europe on a United States Liner, be it the Leviathan, world's largest, or one of these magnificent cabin ships—George Washington, America, Republic, President Roosevelt and President Harding. Sail to Europe . . . under the Stars and Stripes!

UNITED STATES LINES

For complete information see your local agent or our offices: New York, 45 Broadway; Boston, 75 State Street; Chicago, 61 W. Jackson Boulevard; Cleveland, Hotel Cleveland Building; Detroit, 1514 Washington Boulevard; St. Louis, Jefferson Hotel; Philadelphia, 1600 Walnut Street; San Francisco, 691 Market Street; Los Angeles, 756 South Broadway; Minneapolis, 312 Second Avenue, South; Seattle, 1337 Fourth Avenue; Pittsburgh, 705 Liberty Avenue; Washington, 1027 Connecticut Avenue; Little Rock, Wallace Building; New Orleans, Hibernia Bank Building. THESE LINES OFFER A COMPLETE FREIGHT SERVICE—SPECIFY AMERICAN SHIPS FOR YOUR FOREIGN TRADE


life is so pleasant
sailing the ocean on the White Star ...Red Star... or Atlantic Transport Liners. As these great ships glide swiftly over their course...maintaining express schedules with pleasant, effortless speed... life becomes a smartly gay affair. Thoroughly relaxed, you enjoy the many divertissements offered by such sophisticated liners as the Majestic, Olympic, Homeric, Belgenland, etc...And your state room will delight you. Comfortable, light, airy, with every convenience — and so spacious, because roomy accommodations are vital to the enjoyment of your trip.
Your Purse—The I.M.M. Lines not only give you service that is flawless, but fit their service to your travel budget. Rates start at $105. for TOURIST Third Cabin. It is almost literally true that if you can afford a vacation at all, you can afford a trip to Europe
IMM

white star line
red star line • atlantic transport line
international mercantile marine company
For information address No. 1 Broadway, New York; 180 No. Michigan Ave., Chicago; 460 Market St., San Francisco; our offices elsewhere or authorized steamship agents

(*Continued from Page 112*)

Alexandria, Cairo, Luxor, the Nile, the land of the Pharaohs, Haifa, the land of the Philistines, Damascus, the land of the Arabian Nights, Jerusalem, Bethlehem, the Holy Land—these may not all be listed among the spring resorts, but what Mediterranean voyager would willingly miss them? You must shut your eyes to the numerous evidence of encroaching modern life, however.

On your return, you might well stop along the North African coast, at Tunis, Algiers, and Tangier. At all these places one is amazed to find splendid modern hotels, and amused to note that at least some sort of English is spoken almost everywhere.

TRAINS DE LUXE

CONSIDER how wonderful a train would be with no noise, no dirt, real beds instead of collapsible upper berths, and a few more of the simpler conveniences of modern life. Consider, then, the newest Pullmans, the ones now running on a few trains and shortly to be in daily use throughout the country.

The most interesting new car now in use is the single-room sleeping car. Except for a corridor running down one side, the whole car is divided up into small rooms about six feet four by four feet ten. In this space are a genuine bed, a folding table, a chair, lavatory and toilet, three mirrors, five lamps *and* a small blue night light, an electric fan and half a dozen ventilators for summer and a radiator for winter (all controllable by the unaided unmechanical passenger), a shoe box through which the porter can remove the unpolished boots for treatment, a vacuum carafe, luggage space, and coat hangers galore.

A train that would sport such cars would also be the sort to provide telephone facilities at the terminals. For half an hour before the train pulls out, and again after the destination is reached, it is possible to call anybody anywhere—even in Europe, we suppose, although the attendant would undoubtedly advise against it. On the Cascade, the Southern Pacific express running between Portland and San Francisco, there are intercar phones for the use of the passengers. It is possible to order dinner or call the barber without swaying any farther than the end of your own car.

The Raymond & Whitcomb Company is successfully running land cruises around the continent in cars built specially for the purpose. The head car of the train is for recreation, equipped with a gymnasium, barber shop, library, and a very long compartment to be used for movies, lectures, and dances. Next in interest is the car made up of bedrooms, all with private lavatories and one with a shower. That luxurious room has three armchairs, a dresser, and a pair of honest-to-goodness beds.

ADVERTISING PAGES REMOVED

Prohibition

(*Continued from Page 41*)

do likewise. Coöperation between the state and Federal governments as well as among the Federal agencies is an important need. Ten years is a sufficiently long period for bickering. A conscientious effort should be made to determine whether the laws can be enforced, and the states must do their part.

Action in other directions is equally important. For instance, coördination of the border patrols is sadly needed. There are no less than five different forms of border patrol to-day, all more or less conflicting. Definite expansion of the Coast Guard is also advisable. Moreover, personnel in various of the services is inadequate. It should be enlarged and improved, even though such action will necessarily involve added expense. Many millions of dollars are being appropriated annually in an ineffectual attempt to bring about real enforcement. The additional amount required will be relatively small.

Some, if not all, of these problems could have been well along toward solution by this time had Congress respected the recommendations which the President made as long ago as last June. He followed up the appointment of the Law Enforcement Commission with the request that the House and the Senate appoint a joint select committee to cooperate with the Commission. He made his proposal, not to take responsibility from Congress but because he believed coöperation would simplify and expedite action. Not until Congress assembled in regular session last December was there a response to his recommendation. If Congress is to justify itself, it must proceed more rapidly in the future than it has in the past. At least it should set its own house in order before turning its criticism on the man who is sincerely trying to improve conditions.

Sufficient emphasis has not been given to the fact that prior to last March the fundamental difficulties, herein outlined, had been given very little consideration. The Administration has no desire whatsoever for spectacular action; it wants only well-considered action. Sudden determination, snap judgment, will fall far short of meeting the needs of the situation. Conditions that have required years to develop cannot be corrected in a few weeks or a few months.

The tenth anniversary of prohibition marks, indeed, an important turning point. If the proper laws are enacted, it will be possible to determine whether prohibition can be enforced. By the same token, if these laws are not enacted, conditions, already deplorable, will become intolerable. The responsibility rests in no small measure with Congress. May it be equal to its obligations!

Rock Island

The Comfortable Way
TO
CALIFORNIA

THROUGH ARIZONA'S
"GARDEN of ALLAH"
NEW deluxe
GOLDEN STATE
LIMITED

Short direct low altitude route Chicago to Los Angeles and San Diego—through Arizona, the new haven of winter sun-bathers. Quickest by many hours to El Paso-Juarez, Tucson, Chandler, Phoenix, Indio, Palm Springs, Agua Caliente—luxurious hotels, guest ranches, historic shrines, golf, tennis and outdoor sport of every sort—a winter paradise.

No Extra Fare

Superb service—expressing the utmost in travel luxury

Convenient schedule
Minimum daylight hours en route
Only 2 days Chicago to California
3 days from Coast to Coast

Rock Island-Southern Pacific Golden State Route
Through service from Chicago, St. Louis and Minneapolis.

Ask about our new All-Expense Golden State Winter Circle Tours, including the resorts of the Sunny Southwest and a glorious circle of the scenic West. Leave Chicago February 15 and March 15, 1930.

ROCK ISLAND
THE ROAD OF UNUSUAL SERVICE

For detailed information, mail this coupon
Rock Island Vacation Travel Service Bureau
763 La Salle Street Station, Chicago, Ill.

Please send me literature descriptive of Arizona, California, All-Expense Golden State Winter Circle Tours and full information regarding schedules and service via Golden State Route.

*Name*_____ *Address*_____

EUROPE
and Some Questions!

© Publishers Photo

On my European trip what is the pleasantest, most practical route that will include all the places I especially want to see?

How can I be sure of getting the utmost in pleasure and profit for the amount I wish to spend?

What can I do before starting?

Let us answer these questions for you. In 89 years of experience we have smoothed the way for countless travellers. Our expert aid in planning will double your enjoyment.

We make a special feature of Individual Travel enabling full expression of your own ideas and meeting the requirements of your budget. You may start anywhere, anytime.

Group travel of every variation—early Spring tours via the Mediterranean to Italy, the Riviera, Continental Europe, Paris, London—later tours via North Atlantic—including automobile tours in Great Britain, France, Switzerland, and the European Continent generally—tours to North Cape—to Russia—and this year's special attraction—the Passion Play at Oberammergau, for which we are the Official Agents.

Special Air Cruises—General Airplane—Private Automobile Travel—Steamship Tickets by all lines—Cook's Travellers' Cheques good everywhere.

THOS. COOK & SON
585 Fifth Avenue, New York
Philadelphia Boston Baltimore Washington
Chicago St. Louis San Francisco Los Angeles
Toronto Montreal Vancouver
in co-operation with
WAGONS-LITS CO.

Wasp Nests of Our Navy

(*Continued from Page 80*)

are taken on board in large numbers, each plane as it lands must be cleared from the path of the next plane astern with the utmost rapidity. Although the noise of the take-off is not present during landing operations, each landing provides a thrill. As one stands in the life nets alongside the deck, an approaching airplane appears to be coming directly at the onlooker. It comes to rest in a surprisingly short distance, and so close that one can almost reach out and touch it. Although it is not recommended, you can get the effect by letting an airplane ashore land twenty feet away.

By the time an airplane has come to rest, the deck-handling crews are swinging on the wings, apparently materializing out of the air. The pilot opens his throttle and pushes his controls forward, to get the greatest degree of taxiing maneuverability out of his plane, and scuds down the deck as fast as the men on the wings can run. This is exhausting work for the deck crews, as they must be agile and alert and are always working in a gale of wind blowing over the deck. As the plane is taken clear of the landing area it is turned over to a second crew, who continue forward on the run. The different crews are as well-trained and as athletic as football teams. Every man has his own special position and, like Red Grange, wears a distinctive jersey with a large numeral on the back in order that he may be picked out by the coach. Substitutes and whole new teams are put in from time to time, and the rivalry between the teams is intense.

Plane after plane is run forward, and the deck fills up rapidly as the congestion in the air thins out. As on the take-off, the heavy bombers and torpedo planes come last. An amazing thing happens to them as they land, for they disintegrate and fold up before one's eyes. Their wing spread to carry their heavy loads is so great that they cannot be permitted to monopolize precious space on board ship, so their wings are folded back against their tails by fresh teams of swarming sailors. Some of the planes are sent below on fast elevators many times larger than the biggest freight elevators ashore, there to be tucked away into the cavernous enclosed hangar. As the last plane comes aboard, the palisades and nets begin to go up, a jet of steam shoots from the whistle on the island, and, with a mournful hoot to register a change of course to the faithful plane guards astern, the big carrier swings out of the wind and calls it a day.

Then the pilots go below to the ward-room and, over steaming cups of coffee, resume the interminable discussions. "As I was saying, the pay isn't what keeps me in the Navy——"

The standard of hotel service is

STATLER SERVICE

and the last word in hotel equipment is..

RADIO IN EVERY ROOM

You get better values at a Statler: private bath, morning paper, bed-head reading lamp, excellent library, variety of restaurants (from lunch-counter or cafeteria to formal service)—all the Statler comforts, plus Statler Service. And fixed rates are posted in every Statler room.

HOTELS STATLER

Boston

Buffalo

Cleveland

Detroit

St. Louis

New York
(***Hotel Pennsylvania***)